USDA

United States Department of Agriculture

Forest Service

July 2011

Dorset Peru
Integrated Resource Project

Scoping Information

Manchester Ranger District
Green Mountain National Forest
Towns of Dorset, Peru, Manchester and Winhall; Bennington County, VT

Dorset Peak Vista

For Information Contact: Melissa Reichert
Project Team Leader
Green Mountain National Forest
Supervisor's Office
231 North Main Street
Rutland, VT 05701
(802)747-6754
FAX (802)747-6766
E-mail:mmreichert@fs.fed.us

Responsible Official: Alex Sienkiewicz
District Ranger
Manchester Ranger District
2538 Depot Street
Manchester, VT 05255
(802)362-2307, ext 212
FAX (802)362-1251
E-mail:alexsienkiewicz@fs.fed.us

This document can be made available in large print.
Contact Melissa Reichert (802)747-6754 or
email: mmreichert@fs.fed.us

Table of Contents

I. INTRODUCTION

The USDA Forest Service is proposing to implement management activities (proposed action) on the Green Mountain National Forest collectively named the Dorset Peru Integrated Resource Project (Dorset Peru Project). The Green Mountain National Forest (GMNF) Land and Resource Management Plan (Forest Plan) describes the "local" resource goals and objectives and guides the day-to-day resource management operations for the Forest. "Implementing the Forest Plan" means developing and implementing site-specific level forest management projects in an effort to reach Forest Plan desired future conditions. Forest Service activities such as those proposed in the Dorset Peru Project must follow regulations established by the National Environmental Policy Act of 1969 (NEPA) prior to implementation.

Compliance with NEPA at the project level includes the disclosure of environmental effects of proposed activities, public participation, and preparation of a decision document that provides specific direction for project implementation. The environmental analysis for management activities proposed in the Dorset Peru Project will be documented in a site-specific Environmental Assessment (EA).

Public Scoping

The NEPA process provides for public "scoping" to help identify important issues of concern associated with the proposed action. Issues help guide the focus of the site-specific environmental analysis and how detailed the information contained in the EA should be to adequately inform the public as well as the Forest Service Responsible Official making the final decision for what activities may be implemented. Public issues also provide information that may lead to changes in the proposed action or to the development of alternative actions that may be included in the analysis. The resulting EA provides a basis for sound decision-making for selection of the management activities to implement within the Dorset Peru project area that address public issues and meet desired resource conditions provided by Forest Plan direction.

Dorset Peru Project Area Location

The Dorset Peru project area is located in the Battenkill River, Mettawee River, West River, and Otter Creek watersheds primarily within the Towns of Dorset and Peru, Vermont (refer to Map 1). Small portions of the project area are also within the Towns of Winhall and Manchester along its southern boundary. The project area is bounded primarily by the Town boundary in Dorset to the south, west, and north continuing on the northern Town boundary of Peru until the Appalachian Trail/Long Trail, Mad Tom Road (Forest Road 21), North Road (Forest Road 22) and Hapgood Pond Road (Forest Highway 3) to the east. The final portion of the project area to the south is State Route (SR) 11, ridgelines from Bromley Mountain, SR 30 and then Stony Brook until it meets U.S. Highway 7 where it runs north to the Dorset Town boundary.

The project area encompasses approximately 41,699 acres with 25,910 acres (62 percent) in private ownership, 834 acres (2 percent) managed by the State (Emerald Lake State Park, and Hapgood State Forest), and 77 acres (<1 percent) in town ownership. The remaining area (14,770 acres, 35 percent) is National Forest System (NFS) lands administered by the Forest Service.

Land Ownership/Management within the Dorset Project Area	Acres[1]	% of Total
National Forest	14,770	35
State (Emerald Lake State Park and Hapgood State Forest)	834	2
Town (Cutler Memorial and Dorset Memorial Forests in Dorset)	77	<1
Private	22,910	62
Total	41,699	100
[1] Approximate.		

The NFS lands within the project area consist of all or portions of 14 Compartments (C) 50, 56 to 63, 195 to198, and 206. Forest Compartments are administrative land units averaging approximately 1,500 acres. Compartments are divided into Stands (S) which consist of similar vegetation and site conditions. Specific locations can be identified on maps by their Compartment and Stand number combination. For example, C56/S9 is Stand 9 within Compartment 56.

Project Area Background

The Dorset Peru project area has a mix of land ownerships and uses, and is served by an extensive network of Forest Service, Town and private roads. State Route (SR) 30 crosses the southern and western project area boundary; and SR 7A and U.S. Highway 7 bisect the project area from south to north. As noted previously, SR 11 runs along a portion of the southern boundary of the project area. Private lands dominate the area west of U.S. Highway 7 with minor amounts just to the east thereof. The vast majority of NFS lands are along the spine of the Green Mountains in the eastern part of the project area, and in the Taconic Range along the northern boundary of the Town of Dorset. While development is concentrated around the village centers of Peru, East Dorset, Dorset, South Dorset, and along U.S. Highway 7; residences and farms are scattered throughout the project area on private lands. The intermixing of NFS, State, Town, and private lands offers an opportunity to manage resources cooperatively across landowner boundaries.

Elevations in the Dorset Peru project area range from over 3,700 feet on Dorset Mountain in the Taconic Range and 3,400 feet along the spine of the Green Mountains (Peru Peak) to elevations near 700 feet along U.S. Highway 7. The area lies in portions of four watersheds: Mettawee River, Battenkill River, Otter Creek and West River. Water resources throughout the Dorset Peru project area consist of cool, headwater mountain streams, wide, valley bottom streams, and wetlands across the landscape that are highly valued by residents and visitors. The area is natural appearing with rugged terrain typified by Dorset Mountain, Mount Aeolus, Peru Peak and Bromley Mountain, and the pastoral/farm setting in the valleys, such as the Valley of Vermont.

Both NFS and non-NFS lands are mostly forested consisting of northern hardwood and softwood species. Timber harvesting has occurred on all ownerships within the project area and has helped shape the forest type and age class composition throughout the landscape. Openings of various sizes are typical on private lands for homes, crops and pastures. The Dorset Peru project area has a long history of active timber and wildlife management on NFS lands going back to the 1930's. Past timber sales were comprised of both even-aged and uneven-aged management systems that were last implemented about 15 to 20 years ago.

Common treatments in more recent decades include thinnings, selection harvests, and regeneration harvests including variants of the shelterwood and clearcut harvest methods.

The primary recreation opportunities offered within the project area include hiking, biking, snowmobiling, skiing, hunting, fishing, dispersed camping, and viewing wildlife and natural features. Areas of special interest include: the Appalachian National Scenic Trail and Long National Recreation Trail (AT/LT) in the eastern portion of the project area at the crest of the Green Mountains. Old roads, hiking trails, and snowmobile trails lead to Dorset Mountain and other peaks in the Dorset region. There are also numerous snowmobile trails on both NFS and private lands. The Robert T. Stafford White Rocks National Recreation Area, and Big Branch and Peru Peak Wilderness Areas extend into the project area offering visitors a more primitive experience. The State of Vermont manages Emerald Lake State Park which is a popular recreational spot, and is located just north of the center part of the project area along U.S. Highway 7. Bromley Mountain Ski Area on private, State and NFS lands along SR 11 is located in Peru.

Hunting within the project area is actively pursued by visitors and residents alike due to the prime habitat it provides for a variety of small and large game species. Fishing is also a popular attraction to the area with fishing in local streams and the world famous Battenkill River where native and stocked brook, rainbow and brown trout are available.

Forest Plan Management Direction

The individual management activities that collectively define the Dorset Peru Project proposed action have been developed with direction found in the GMNF 2006 Land and Resource Management Plan (Forest Plan). The Dorset Peru Project is designed to move the existing conditions of NFS lands within the project area towards the Desired Future Conditions (DFC) as directed in the Forest Plan. The GMNF is designated to different Management Areas (MAs) with each having a major emphasis and DFC, and provides specific management direction for activities needed to achieve Forest Plan goals and objectives.

The NFS lands in the Dorset Peru project area fall within nine MAs although the vast majority is allocated to the Diverse Forest Use, Remote Backcountry Forest, Wilderness, and Green Mountain Escarpment MAs (82 percent of the project area). Refer to Maps 1, 2 and 3 for MA locations within the project area. A brief description of where each MA is located follows the table below.

Forest Plan Management Area	Acres[1]	% of Total
Diverse Forest Use	4,202	28
Wilderness	2,879	19
Remote Backcountry Forest	2,952	20
Remote Wildlife Habitat	982	7
Alpine Ski Area	158	1
Appalachian National Scenic Trail	836	6
Robert T. Stafford White Rocks National Recreation Area	453	3
Green Mountain Escarpment	2,224	15
Alpine Ski Area Expansion	84	1
Total	14,770	100

[1] Approximate.

1. Diverse Forest Use (Forest Plan, pp. 47 and 48): A majority of the land allocated to the Diverse Forest Use MA is located west of the Appalachian Trail/Long Trail between SR 11 and Mad Tom and Staple Brook Roads (Forest Roads 21 and 58 respectively). There is also a small portion south of the Appalachian Trail/Long Trail along SR 11 in Peru and Winhall. Another very small portion extends west of Hapgood Pond Road (Forest Highway 3) and south of Mad Tom Road (Forest Road 21) in Peru.
2. Wilderness (Forest Plan, pp. 49 to 53): The Big Branch Wilderness Area extends into the eastern portion of the project area where the Dorset and Peru Town boundaries meet. The Peru Peak Wilderness Area extends into the eastern portion of the project area adjacent to the Appalachian National Scenic Trail north of Mad Tom Road (Forest Road 21) and east of Staple Brook Road (Forest Road 58).
3. Remote Backcountry Forest (Forest Plan, pp. 54 to 57): All land allocated to the Remote Backcountry Forest MA is within the Town of Dorset and is located on the northern Town boundary.
4. Remote Wildlife Habitat (Forest Plan, pp. 60 to 62). The land allocated to the Remote Wildlife MA is in the eastern portion of the project areas between Mad Tom Road (Forest Road 21) and SR 11 east of the Appalachian National Scenic Trail MA.
5. Alpine Ski Area (Forest Plan, pp. 63 to 65): The land allocated to the Alpine Ski Area MA (Bromley Mountain Ski Area) is located in the southeastern portion of the project area just north of SR 11 in the Town of Peru.
6. Appalachian National Scenic Trail (Forest Plan, pp. 66 to 72): The land allocated to the Appalachian National Scenic Trail MA is from SR 11 in Winhall to Griffith Lake at the northern boundary of the Town of Peru.
7. Robert T. Stafford White Rocks National Recreation Area (Forest Plan, pp. 79 to 81): A portion of the Robert T. Stafford White Rocks National Recreation Area is between Big Branch and Peru Peak Wilderness Areas at the northern boundary of the Town of Peru.
8. Green Mountain Escarpment (Forest Plan, pp. 86 to 89): The land allocated to the Green Mountain Escarpment MA is located in the center portion of the project area east of U.S. Highway 7 along the western slopes of the Green Mountains.
9. Alpine Ski Area Expansion (Forest Plan, pp. 103 to 104): The land allocated to the Ski Area Expansion MA is located east and adjacent to the Alpine Ski Area MA.

Public Involvement and Collaboration

The Dorset Peru Project was initiated in the spring of 2007 in meetings with town officials, community members, stakeholders and Vermont Department Forest Parks and Recreation (VFPR) and Vermont Fish and Wildlife Department (VFWD) staff; and a public field trip to Dorset Mountain held in June 2007. A public meeting was held in October 2009 at Bromley Mountain in Peru, VT to present information on resource inventories that were conducted in the project area, and to provide an opportunity for public input on this information. In April and May 2010, meetings were held in Dorset and Peru, VT to further collaborate with the public. Individuals, organizations, towns and agencies were invited to: 1) learn about the Forest Service desire to implement integrated resource management activities; 2) provide local knowledge and ideas for possible site-specific activities and opportunities; and 3) identify areas of particular interest in the project area. Potential management opportunities were identified through exchange of ideas between meeting participants.

Two public field visits were held during the summer of 2010, one to explore the potential East Dorset Trail, the other to look at existing and potential wildlife openings. The ideas for management activities developed through public collaboration and resource specialists' condition assessments were explored and expanded upon throughout the next year. During this

same time period, Forest Service staff collected more detailed inventory information to further verify and refine management activity options. The Forest Service narrowed the list of potential project activities based on these efforts and presented them at a public meeting held in Peru, VT in May 2011. The additional feedback provided by the public during and after this meeting has resulted in the Dorset Peru Project proposed action contained in this scoping document.

The Forest Service is committed to continue working with the public to manage NFS lands within the Dorset Peru project area in a manner that address the most interests as possible while meeting the intent of the Forest Plan. The Forest Service is particularly interested in developing opportunities to create partnerships and volunteer organizations to implement project activity following the completion of the environmental analysis. Although the focus is primarily on project activity on NFS lands within the Dorset Peru project area, the Forest Service would also like to consider any opportunities to coordinate management on adjacent private, Town, and State lands to achieve common goals across land ownership boundaries.

Stewardship Contracting Opportunities

Stewardship End Result Contracting (Stewardship contracting) is a tool to accomplish resource management projects by combining them into a package of contract or agreement opportunities. The projects are developed with public collaboration and focus on what's left behind or the "end results" rather than on what's removed from the land. Stewardship contracting allows for the revenues from timber sales to fund projects that improve forest health, restore or maintain water quality, improve fish and wildlife habitat, and reduce hazardous fuels. Many of the activities currently described in the Dorset Peru Project proposed action could be implemented with Stewardship contract funding. Stewardship contracting can also be used to implement qualified resource management activities on private land to complement those proposed on NFS lands. The Forest Service plans to continue public collaboration to develop Stewardship Contracting opportunities within the Dorset Peru project area.

Dorset Peru Project Timeline

Following the scoping period initiated by this document, the Forest Service will identify issues or concerns from responses received from the public. The environmental effects from the proposed action and any alternatives developed to address public issues will then be documented in the EA. It is anticipated that the preliminary EA will be ready for public review for a 30-day notice and comment period by the end of **January 2012**. Changes or modifications to the preliminary EA will be included in a Final EA that is anticipated by **May 2012**. If it is determined that there are no significant effects resulting from the management activities proposed, a Decision Notice selecting which alternative to implement will accompany the Final EA.

II. PURPOSE AND NEED

This section provides the purpose and need for the proposed action within the Dorset Peru project area for the following resource categories:

1. Habitat Diversity
2. Timber
3. Fisheries
4. Non-Native Invasive Plants
5. Soil and Water
6. Recreation

7. Scenery
8. Transportation
9. Heritage

The pertinent Forest Plan goals, objectives and management direction for each resource category is the basis for defining the activities that may be implemented as part of the Dorset Peru Project. The purpose and need section answers the question: "why are management activities being considered for the Dorset Peru project area?" Identifying the opportunities that move the existing resource conditions within the project area toward the Forest Plan desired future conditions are the main function of defining the purpose and need.

1. Habitat Diversity

Improve the Composition and Age Class Structure of Ecosystems
Forest Plan Goal #2 is to "[m]aintain and restore quality, amount and distribution of habitats to produce viable and sustainable populations of native and desirable non-native plants and animals" (Forest Plan, p. 10). In order to contribute to this goal, the Forest Plan identifies forest habitat type composition and age class objectives to ensure that diversity of composition, structure, and function is maintained or increased on the GMNF (Forest Plan, pp. 10 to 12).

While some of the composition and age class objectives can be met through natural processes, vegetation management is often used to restore and enhance diversity of habitat types and structures (Forest Plan, p. 15). Vegetation management is also used to enhance habitats and features of particular value to certain plant and animal species where that habitat is uncommon in the forest, such as aspen, upland openings, and oak. Within the Dorset Peru project area, these types of management actions would generally occur within the Diverse Forest Use, Remote Wildlife Habitat, and Escarpment MAs.

The Forest Plan states that management activities within the Diverse Forest Use and Remote Wildlife Habitat MAs will provide suitable habitat for a variety of wildlife and plant species (Forest Plan, pp. 47 and 58). Activities within the Remote Wildlife Habitat MA will also widen the diversity of habitats by enhancing the younger and older age classes, and targeting management to meet specific wildlife habitat needs (Forest Plan, p. 60). Both MAs identify a desire for a mix of deciduous and coniferous forest stands of various types, and a desire for suitable habitat for a wide variety of wildlife and plant species. The stands will vary in size, age, and tree species and both even-aged and uneven-aged harvest techniques will be used. The Forest Plan also states that the purpose of management activities in the Escarpment MA will be to enhance several less common oak-affiliated natural communities in order to meet the needs of their associated plant and animal species (Forest Plan, p. 86).

An assessment of habitat diversity within the Dorset Peru project area, called a "habitat management unit (HMU) analysis", was conducted by Forest Service resource specialists during 2009 to 2011. The analysis was based on existing records as well as vegetation inventory data recently gathered in the project area. The purpose of this analysis is to apply Forest Plan habitat type composition and age class objectives at the site-specific (HMU analysis) scale. Specific HMU objectives take into consideration the current condition and overall Forest Plan objectives, as well ecological conditions and long-term tendencies of ecosystems found in the project area. The difference between the current condition of the Dorset Peru HMU and the specific HMU objectives is the basis for identifying potential management activities within the project area. Based on this difference, stands can be identified for silvicultural treatment or other vegetation management to achieve HMU composition and age class objectives.

Tables 1 and 2 illustrate the following important gaps between the current and desired future condition for habitat composition and age class:

- An absence of regenerating age class (0-9 years old) across all habitats on suitable lands; this is related to an over-abundance of mature and old age class, and to the shift of stands harvested in the 1980s into the young age class.
- A significant imbalance in desired composition among northern hardwood, mixedwood, and softwood habitat types, with northern hardwoods significantly over-represented, likely due to historical land uses.
- A small amount of oak habitat along the Green Mountain escarpment, where we expect to see more oak, likely due to lack of historical natural disturbance regimes like fire.
- A significant deficit in aspen-birch and permanent upland opening habitat, particularly in suitable lands where these habitats can be maintained at desired levels.

Table 1: Comparison of important existing habitat composition conditions with HMU objective ranges.

Habitat Type	HMU Objective (all NFS lands)		Existing Habitats (all NFS lands)		Existing Habitats (suitable lands)[1]	
	%	acres	acres	%	acres	%[2]
Northern Hardwoods	40-50	5,900-7,370	11,624	79	6,281	43
Mixedwood	35-45	5,150-6,650	1,167	8	475	3
Softwood (spruce/ fir and hemlock/ white pine)	10-20	1,450-3,000	701	5	166	1
Aspen/Birch	1-2	150-300	850	6	0	0
Oak	1-2	150-300	125	1	95	1
Upland Opening	2-3	300-450	80	<1	80	<1
Total			**14,547**			

[1]Represents the proportion of all NFS lands in the Dorset Peru project area suitable for timber management by habitat type; shown for context, as some habitat types (such as Aspen/Birch) require timber management to exist at the levels defined by the Forest Plan and Project objectives.
[2] Percent of total habitat type acres on all NFS lands.

Table 2: Comparison of the existing regenerating age class (0-9 years) with HMU objective range; and existing age class distribution for remaining age classes.

Age Class (Includes All Habitat Types)	HMU Objective[1]	Existing Condition (all NFS lands)[2]		Existing Condition (suitable lands)[3]	
	acres	*acres*	*%*	*acres*	*%*
Regenerating (0-9 years)	203-753	0	0	0	0
Young		1,415	10	1,004	24
Mature		9,722	67	2,786	67
Old		3,329	23	386	9

[1]Acre range represents potential natural vegetation of suitable NFS lands assigned to an even-aged management status (60 to 80 percent of suitable lands), adjusted for conversions to or maintenance of existing aspen, birch, and openings.
[2] Condition across all NFS lands within the Dorset Peru project area.
[3] Applies only to NFS lands suitable for timber management and assigned to an even-aged management status prior to project development.

There is an opportunity to:

- Increase the amount of regenerating forest within the 0-9 year old age class for wildlife species that require this habitat.

- Work toward balancing age class distribution of lands suitable for even-aged silviculture in order to provide variety in habitat structure for plant and animal species.
- Increase the softwood component in mixedwood and hardwood stands where soils and ecological landtypes indicate inherent softwood tendencies.
- Increase the amount of oak in stands within the Green Mountain Escarpment MA.
- Increase the abundance of aspen and upland opening habitat.

Aspen Habitat
Management objectives used to provide a mix of habitats include increasing acres of aspen to support species that prefer these habitats (Forest Plan, p. 10). Aspen can occur in both pure stands, as well as scattered small clones within stands of other habitat types. Aspen clones in other habitats can be managed over time to create new stands of aspen.

There are currently no stands of pure or mixed aspen within the project area. While there are 850 acres of paper birch stands within the project area (Table 1), all of these stands are in Wilderness, and are starting to deteriorate and convert to northern hardwood and mixedwood stands through natural succession. There are no existing paper birch stands in the project area that are suitable for timber management. Several stands of other habitat types have been identified where clones of aspen exist in various age and structural conditions. If mature aspen clones are not managed, the clones can become less productive and die, removing this habitat feature from the landscape. Allowing these clones to decline also removes the potential to convert them to pure aspen stands. Providing age and structural diversity of aspen clones and stands can increase available wildlife habitat within the project area. However, there are not very many stands with enough of an aspen component to be able to create whole stands of aspen. Management is more likely to increase the abundance of aspen within stands of various other habitat types, but will not likely create many acres of pure aspen habitat,

There is an opportunity to:
- Create new early-successional aspen habitat in stands suitable for timber management within the project area for wildlife species that require a mix of these unique habitats, replacing declining large stands of paper birch in Wilderness.
- Improve aspen clone diversity in stands suitable for timber management within the project area, expanding some clones into full aspen stands where ecological landtypes and field data suggest potential for a strong regeneration response.

Oak Habitat
The Green Mountain Escarpment MA is where vegetation management is focused on enhancing and expanding oak, oak-pine, and oak-hardwood habitat. In the project area, oak habitat is restricted even within the Green Mountain Escarpment MA, occurring north of Mad Tom Ravine, and along Beech Ridge. Only one stand, C50/S9, is dominated by oak, although several others are composed of a mix of oak and northern hardwoods. Management to improve oak habitat includes regenerating oak and oak-hardwood stands to allow oak seedlings to get established in high levels of light, and releasing established oak saplings and small trees from over-topping vegetation.

There is an opportunity to:
- Increase the abundance of oak in stands that have an oak component by releasing them from competing vegetation.
- Regenerate oak and oak-hardwood stands to create new stands of oak.

Deer Wintering Areas
Management direction for wildlife on the GMNF includes a Forest-wide emphasis to maintain and enhance wintering habitat for white-tailed deer (*Odocoileus virginianus*) by retaining and encouraging vegetative conditions for both shelter and browse (Forest Plan, pp. 29 and 30). Wintering habitat for deer will be emphasized within, or adjacent to, identified Deer Wintering Areas (DWAs), and permanent upland wildlife openings containing grasses, forbs, and shrub growth should be provided adjacent to DWAs to provide forage in early spring. The Diverse Forest Use MA (Forest Plan, pp. 47 and 48) and the Remote Wildlife Habitat MA (Forest Plan, pp. 60 to 62) each emphasizes providing a mix of habitats for wildlife species, including white-tailed deer.

There are 10 to 15 DWAs within or adjacent to the project area (refer to Map 1), although most are located on non-NFS lands, particularly in the Otter Creek and Mettawee River valleys. The DWAs on NFS lands typically lack abundant early-succession hardwood vegetation for browse and/or the softwood vegetation may not provide winter cover of desirable quality. Without maintenance and enhancement, the quality of deer wintering habitat and ultimately the winter survival of white-tailed deer within and adjacent to the project area may decline.

There is an opportunity to:
- Improve quality of winter cover in DWAs.
- Enhance availability and quality of browse adjacent to DWA cover areas to improve overall DWA conditions.

Permanent Upland Openings
The desired future conditions for the Diverse Forest Use MA (Forest Plan, pp. 47 and 48) and the Remote Wildlife Habitat MA (Forest Plan, pp. 60 to 62) include providing permanent upland opening habitats in shapes and sizes that are consistent with visual objectives. Permanent upland openings provide important early-successional wildlife habitat, ranging from grass-forb meadows to openings with young, shrub-scrub, woody vegetation. Without early-successional habitat like that provided by permanent upland openings, the diversity and quality of wildlife habitat in the project area would decrease.

Currently less than one percent of the suitable NFS lands within the project area are in the permanent upland opening habitat type, which is below the minimum objective set by the HMU analysis (Table 1). There are currently 25 upland openings in the project area, totaling about 80 acres. Most of the existing opening stands are human-made openings, typically log landings from pervious timber sales, that are small (less than 1 or 2 acres), and are being lost as forest succession encroaches upon them. Scientific literature indicates that these small openings do not provide ecologically functional, early-successional habitat for most wildlife species. Thirteen of these stands are also too small or difficult to maintain. These stands would be merged into and managed as part of the surrounding timber stand. Two of these stands are ski trails or tree islands and maintained by Bromley Mountain ski area.

The Dorset Peru Project includes a large component of the Remote Wildlife Habitat MA where upland openings and regenerating forest habitats are critically important for reclusive wildlife species such as black bears, bobcats and northern goshawks (Forest Plan, p. 60). Early-successional habitat provided by permanent upland openings can be treated by mowing, hand-cutting, and/or prescribed fire applied on an annual to five-year schedule to maintain vegetation in young early-successional stages such as grasses and forbs. Other early-successional habitat is provided by temporary openings created by silvicultural regeneration treatments (such as clearcut or shelterwood). These regenerating stands provide early-successional habitat

conditions that change gradually over time for as many as twenty years, at which time early-successional habitat benefits rapidly diminish.

A major emphasis of the Remote Wildlife Habitat MA is to create diverse habitats, including permanent upland and temporary openings and brushy areas (Forest Plan, p. 60). There is an opportunity to prescribe treatments in this MA that would benefit reclusive wildlife species by providing "late-stage" early-successional habitat. Designating some stands as late-stage permanent upland openings that would be regenerated every 20 years would increase the continuing availability of older early-successional habitat (5 years and older). These habitats with small diameter woody vegetation as a component would complement the permanent upland openings that are maintained on an annual to five-year schedule and the temporary openings of silvicultural regeneration treatments that mature to older forest stands.

There is an opportunity to:

- Restore, enlarge, and enhance existing upland openings to provide early-successional habitat for wildlife.
- Create new permanent openings in the project area to provide additional early-successional habitat to meet forest habitat composition objectives.
- Create some permanent openings to be managed for late-stage early-successional habitat with older age classes of vegetation (5 to 20 years).

Apple Tree Management

Forest-wide management direction for wildlife includes retaining and releasing apple trees whenever and wherever possible (Forest Plan, pp. 27 and 29). Individual apple trees and remnant orchards are an important source of wildlife food and are historic features of the GMNF. As the forest matures, other tree species encroach upon and shade apple trees, which become less productive in the reduced light of the understory and eventually die. Removal of over-topping trees immediately around the apples invigorates their growth and promotes fruit production. Occasional pruning of these apple trees helps redirect production from vegetative growth to production of fruit.

Apple trees are located in at least three sites in the project area. Although our current knowledge suggests that the abundance and distribution of apple trees is considerably lower within this project area than in other parts of the GMNF, it is anticipated that more apple trees would be discovered during additional inventory, planning and project implementation.

There is an opportunity to:

- Release apple trees so that these historic features continue to provide food for wildlife.
- Prune apple trees to enhance soft mast production, providing an increased food source important to many wildlife species.
- Pile material cut to release and prune apple trees to enhance habitat for small mammals, reptiles, and amphibians.

Down Woody Debris Habitat

Across the project area in a variety of MAs, there are historic sites including rock walls, building foundations, and wells. These sites are often located in small- or medium-size openings and they may include other habitat features such as small ponds, wetlands, or apple trees. The features themselves (such as rock walls, wells, and foundations) provide unique wildlife habitat providing nesting shelter or travel ways for small mammals, reptiles, and amphibians.

The Heritage Section discusses the need to provide stewardship for historic sites throughout the project area that are within or near proposed vegetation management activities. Trees and

shrubs cut to maintain structures associated with these sites can be retained in brush piles that provide nesting, foraging, and travel habitat for small mammals, reptiles, and amphibians.

There is an opportunity to:

- Maintain historic structures and improve the wildlife habitats they provide.
- Creatively place removed material in such a way as to provide nesting, foraging, and travel habitat for small mammals, reptiles, and amphibians.

Bat Hibernacula

One bat hibernaculum (Aeolus or Dorset Cave) is located within the project area and a second hibernaculum (Skinner Hollow) is located south of the project area. Both hibernacula have in the recent past included federally-listed, endangered Indiana bats. The 5-mile hibernaculum buffer for each site overlaps with the project area (refer to Map 1). All timber harvest from April 15 through October 30 within five miles of a known Indiana bat hibernaculum would be in accordance with provisions of a Forest Service management plan for that hibernaculum (Forest Plan, p. 28).

White Nose Syndrome (WNS), a virulent and fatal disease condition that infects cave- and mine-hibernating bats has resulted in profound mortality of these bats throughout the Northeast, including Vermont. At present, it is not known if Indiana bats still over-winter in these hibernacula or if they occur within the project area. Although it is apparent that local populations of other cave- and mine-hibernating bats (such as little brown bat, *Myotis lucifugus*, or northern long-eared bat, *M. septentrionalis*) have suffered extreme mortality over the past few years, the exact status of these populations in the project area is not known. As bat mortality has resulted in suitable bat foraging and roosting habitat that is "under-occupied," it is unlikely that habitat enhancement activities are required in the project area at this time. The Forest Service remains in close contact with the U.S. Fish and Wildlife Service and the Vermont Fish and Wildlife Department. Any management activities that might benefit these bat species may be incorporated into the project, as appropriate.

There is an opportunity to:

- Partner and collaborate with federal and state wildlife agencies, university researchers, and other agencies and groups to promote research on WNS, to monitor the presence of bats within the project area, and to implement management actions as they develop.
- Maintain key habitat features throughout the home ranges of bat species that occur on NFS and non-NFS lands.

Wildlife Habitat Improvement on Non-NFS Lands

Many wildlife species occur across large home ranges that span NFS and non-NFS lands. Non-NFS lands adjacent to the GMNF include habitats that provide food and shelter for many of these species. The project area also includes known wildlife travel corridors that connect large areas of habitat. In many cases, these travel corridors transect non-NFS lands, connecting large tracts of habitat located on the GMNF. Some of these wildlife corridors intersect State highways and other roads.

There is an opportunity to:

- Partner and collaborate with private land owners within the Dorset Peru project area to identify potential improvements to existing wildlife habitat conditions.
- Partner and collaborate with the Vermont Agency of Transportation and Vermont Agency of Natural Resources to enhance habitat conditions along wildlife travel corridors.
- Maintain and increase key habitat features throughout the home ranges of wildlife species that occur on NFS and non-NFS lands.

2. Timber

Enhance Forest Health and Diversity; and Promote High Quality Timber Production
Quality habitats through diverse forest composition and age classes are important Forest Plan objectives (Forest Plan, pp. 10 and 11). Timber harvesting is the primary tool to achieve or work toward these objectives (Forest Plan Objective under Goal #10, p. 15). Silvicultural practices will be used to meet wildlife and ecological objectives in the Diverse Forest Use MA (Forest Plan, p. 47). Likewise, silvicultural practices will be used to meet wildlife habitat objectives in the Remote Wildlife Habitat MA (Forest Plan, p. 60), and the use of commercial tree harvesting is required to maintain desired habitats in the Green Mountain Escarpment (Forest Plan, p. 86). Providing high-quality sawtimber and other timber products on a sustained yield basis is also an important management objective of the Forest Plan, and a major vegetative management emphasis of the Diverse Forest Use MA (Forest Plan, pp. 14 and 47).

Inventories have shown that a number of timber stands managed for high-quality timber within the Dorset Peru project area are overstocked with trees. Some stands have trees afflicted with old age, insect, disease or physical damage from the elements to a degree that would designate them as low quality stands. Some stands are now mature or over mature; and desired tree size, age and quality have been achieved, or growth levels have dropped off. These stands are now ready to be harvested before sawlog quality is reduced, or the trees decline in economic value and die.

Without any vegetation management, the forest habitat composition and age class distribution within the project area would not contribute towards achieving the Forest-wide objectives specified by the Forest Plan. In addition, stands would continue to decline in health and timber quality would decrease.

There is an opportunity to:

- Implement both even-aged and uneven-aged silviculture practices to meet wildlife habitat objectives.
- Create a mix of deciduous and coniferous forest stands of various types in stands that vary in size, shape, age, height, and tree species composition.
- Improve size and quality of sawtimber by reducing stand density, improving spacing and retention of more desirable species.
- Improve sawlog production and wood quality by removing trees in low quality stands afflicted with insect, disease and other damage to prevent the spread of the damaging agent or to remove a species that may be a vector for insect spread.
- Capture sawlog quality in mature and over mature trees before it is reduced or the trees decline in value.
- Improve pulpwood and fuelwood production that can be used as a local alternative to fossil fuels.
- Improve forest and stand health and diversity by:
  - ✓ Regenerating poorly stocked, low quality, mature stands, and stands that are declining in productivity to grow new stands and sustain forest cover and timber production for the long-term.
  - ✓ Promoting an increase in red oak habitat by releasing oak from competing hardwoods.
  - ✓ Promoting an increase in softwood and mixedwood habitats by releasing spruce/fir and hemlock from competing hardwoods.
  - ✓ Promoting an increase in aspen/paper birch habitat by creating openings in areas with a presence and propensity to growing aspen/birch.

- ✓ Increasing the diversity of wildlife habitat that relies on open and early successional habitat by creating temporary and permanent openings.

Provide Forest Products
Forest Plan Goal #8 is to "[p]rovide a sustainable supply of forest products" while an associated objective is to "provide high-quality saw timber and other wood products for local economies" (Forest Plan, p. 14). Forest Plan Goal #17 is to "[s]upport regional and local economies through resource use, production, and protection" (Forest Plan, p. 17). Timber sales resulting from vegetation management can be offered to public bidders through Standard Timber Sale and/or Stewardship contracts to help support local and regional economies.

The availability of timber sales from NFS lands is an important component to the local and regional wood product based economies in Vermont. Without timber sales generated from vegetation management activities within the Dorset Peru project area, the opportunity to benefit these economies would be lost.

There is an opportunity to:
- Provide a number of different sized timber sales which would support local and regional economies.
- Provide a number of post harvest service contracts such as site preparation and tree planting to help establish reforestation while supporting the local economy.

3. Fisheries

Forest Plan Goal #4 is to "[m]aintain or restore aquatic, fisheries, riparian, and wetland habitats" (Forest Plan, p. 13). Also, Forest Plan Goal # 6 is to "[m]aintain and restore ecological processes and systems on the GMNF within a desired range of variability, including a variety of native vegetation and stream channel types, and their patterns and structural components" (Forest Plan, p.14). Principles of stream geomorphology and habitat management are used to restore and enhance fisheries habitat (Forest Plan, p. 13) while knowledge of riparian/floodplain functions and large woody debris (LWD) dynamics are used to restore and enhance stream ecosystem processes (Forest Plan, p. 14).

Improve Fish Habitat Quality
Stream habitat in Mad Tom and Little Mad Tom Brooks and the headwater reaches of the Mettawee River lack the quantities of large woody debris (LWD) that would naturally be found in upland streams. Large woody debris is critical to creating diverse stream habitats for fish, amphibians, and aquatic insects. It is also important for maintaining streambank and channel stability. Habitat surveys have not been completed in the headwaters of the Mettawee River on NFS lands. Visual observations during fish population surveys indicate LWD quantities are similar to those found throughout the Forest.

The amount of pool habitat in forested headwater streams is closely tied to the quantity of LWD found in the streams. Large trees that fall into streams create deep pools with hiding cover for aquatic biota. Low percentages of pool habitat are indicative of low quantities of LWD.

Table 3 compares the natural or desired LWD quantities and pool habitat with the existing conditions for LWD and pool habitat in the Mettawee headwaters, Mad Tom, and Little Mad Tom Brooks.

Table 3: Comparison of existing LWD and pool habitat with Forest Plan objectives.			
Stream	**# LWD/Mile**	**Pool Habitat**	
		Percent Pool Area (%)	**Percent High Quality Pools[2] (%)**
Forest Plan Objective[1]	**175-230**	**30**	**33**
Mettawee River headwaters[3]	80 (estimate)	16 (estimate)	33 (estimate)
Mad Tom Brook	70	14	35%
Little Mad Tom Brook	93	18	34

[1] 2006 Forest Plan objectives establish the desired future condition for fish habitat.
[2] High quality pools are as long as the stream width, with a depth of 2 feet or greater and abundant cover.
[3] Estimates based on survey data from similar streams in the project area.

In addition to the deficiencies in existing LWD in area brooks, several stream culverts along existing roads in the project area are migration barriers to native Brook trout and other aquatic species. The streams currently impacted on NFS land are a tributary to Mad Tom Brook along the proposed East Dorset Trail. In addition, there are two culverts on town roads that are barriers to aquatic organisms: 1) Tower Road in the Town of Dorset in the headwaters of the Mettawee River and; 2) Town Highway #14 on Farnum Brook in the Town of Peru.

Without increasing the amount of LWD and aquatic organism passage improvements, aquatic habitat diversity and connectivity will remain below desirable levels and may decrease over time.

There is an opportunity to:

- Increase the amount of LWD and pool habitat in the headwaters of the Mettawee River and in Mad Tom and Little Mad Tom Brooks.
- Improve fish passage at road-stream crossings where culverts have created migration barriers.

Improve Fish Habitat Quality on Non-NFS Lands

Stream habitat and culvert surveys have not been completed and/or fully evaluated on streams crossing private lands within the project area. It is likely that most of these streams are affected by low quantities of LWD similar to streams on NFS lands resulting in reduced habitat diversity, stability and sediment storage. Likewise, many culverts along roads under town, state or private jurisdiction are likely blocking aquatic organism migration.

There is an opportunity to:

- Collaborate and establish partnerships with private landowners, organizations, towns, and state agencies to identify streams with poor fish habitat quality on non-NFS lands within the project area.
- Improve fish habitat in streams on non-NFS lands within the project area.

4. Non-Native Invasive Plants

Control Existing Populations of Non-Native Invasive Plants (NNIP) on Non-NFS Lands

Forest Plan Goal #2 is to "[m]aintain and restore quality, amount, and distribution of habitats to produce viable and sustainable populations of native and desirable non-native plants and animals" (Forest Plan, p. 10). An associated objective is to "[m]inimize adverse effects of NNI[P] on National Forest resources (Forest Plan, p. 13).

Non-native invasive plant surveys have focused on roads, trails, and rivers in the Dorset Peru project area. There have been 12 species of NNIP found in 156 individual infestations. Approximately 40 percent of the infestations are on private land, while the remaining 60 percent are on NFS lands. The most common NNIP found is Morrow honeysuckle. Of all the places surveyed, Forest Road 259 has the most infestations in a fairly concentrated area. Control of NNIP on NFS lands within the project area is already authorized by the Forest-wide Non-Native Invasive Plant Control Project Decision Notice dated October 19, 2010 and treatment of existing infestations is ongoing through a variety of methods. There is a need, however, to focus on the treatment of infestation on non-NFS lands to effectively manage NNIP across land owner boundaries.

There is an opportunity to:

- Collaborate and establish partnerships with private land owners, organizations, Towns, and State agencies to identify and control existing and future populations of NNIP on non-NFS lands that complement NNIP treatment activities on NFS lands.

5. Soil and Water

Address existing or potential risks of erosion, soil compaction, stream sedimentation, or impacts to wetland functions

Forest Plan Goal #3 is to "[m]aintain or restore the natural, ecological functions of soil' (Forest Plan, p. 13). Forest Plan Goal #4 is to "[m]aintain or restore aquatic, fisheries, riparian, and wetland habitats" (Forest Plan, p. 13). Soil, wetland, and water resource inventories were conducted to identify areas where these Forest Plan objectives are not fully met due to existing or potential risks of erosion, soil compaction, stream sedimentation, or impacts to wetland functions. Inventories identified on-going or potential future resource degradation at the following locations (refer to Maps 2 and 3):

- Dorset Peak East (old skid road where it climbs up the ridge and old woods roads in the wetland sections)
- East Ridge (old skid road)
- Hannah's Crotch (old skid road)
- Beech Ridge Access (currently a town pent road that accesses several camps on Beech Ridge)
- Forest Road 285 (Forest Service right-of-way, the first section of which is a town trail)
- Old Mad Tom Trail/ Proposed East Dorset Trail (formerly a town road as well as Forest Service Trail)
- Pierce Road Extension (woods road accessing NFS lands, off the end of the traveled portion of Pierce Road)

There is an opportunity to:

- Reduce soil and water resource degradation resulting from illegal trail or road recreation uses, poor trail design and locations, and/or unneeded roads at the identified locations.

6. Recreation

Forest Plan Goal #12 is to "[p]rovide a diverse range of high quality, sustainable recreation opportunities that complement those provided off National Forest System lands" (Forest Plan, p. 15). The Forest Plan provides opportunities for a diversity of trail uses including hiking, biking, cross-country skiing, and horseback riding (Forest Plan ROD, p. 19).

Forest Plan Goal #14 is to "[p]rovide a safe, efficient, and effective Forest transportation system that meets both the needs of the Forest Service and the public" (Forest Plan, p.16). A Travel Analysis was completed for the Dorset Peru project area which includes a narrative of the existing condition and needs of the trail system (Travel Analysis for the Dorset Peru Integrated Resource Project, May 2011). The recommendations contained in the trails component portion of the Travel Analysis provide the basis for the trails management needs within the Dorset Peru project area.

The desired future condition for recreation opportunities varies across MAs in the Dorset Peru project area:

- The Diverse Forest Use MA is to provide diverse trail opportunities (Forest Plan, p. 47) with a desired Recreation Opportunity Spectrum (ROS) class towards Roaded Natural.
- The Wilderness MA is to have little evidence of human development with several exceptions including trails, trail shelters, trail blazes, and limited trail signing with a desired ROS class towards Primitive (Forest Plan, p. 49).
- The Remote Backcountry Forest MA is to be accessible by foot and other non-motorized means of transport with a ROS of class towards semi-primitive non-motorized (Forest Plan, p. 54).
- In the Remote Wildlife Habitat MA, recreation related disturbances to wildlife will be minimal, and trails will be managed for access by foot or other non-motorized means of transport with a ROS of class towards semi-primitive non-motorized (Forest Plan, p. 60).
- The Appalachian National Scenic Trail MA is to provide a variety of opportunities in the most primitive and natural setting and recognize the nationally significant aesthetic value of these lands with a ROS of class towards semi-primitive non-motorized (Forest Plan, p. 67).
- In the Robert T. Stafford White Rocks National Recreation Area, a range of recreational opportunities will be provided in a predominantly roadless setting. These opportunities will include foot and other non-motorized means of transport such as skis, snowshoes, horses, and bicycles, as well as winter motorized uses with a ROS of class towards semi-primitive non-motorized (Forest Plan, p. 67).
- The Green Mountain Escarpment MA provides non-motorized and winter motorized trail opportunities with an ROS of class towards semi-primitive motorized.

Provide Hiking Trail Opportunities

The project area contains trails managed for hiking, biking, and snowmobiling including 10.8 miles of the AT/LT, 7.7 miles of Corridor 7, a primary snowmobile trail, the 3.2 mile Mad Tom snowmobile trail that connects parking at Emerald lake State Park and the Corridor 7 snowmobile trail, a trailhead on SRs 11/30 and small parking areas or pull-offs on Grouse Lane, FR 21 and FR 58.

The project area also contains trails that are not classified as managed NFS Trails. The old Mad Tom Trail follows the Mad Tom Brook with termini at Mad Tom Road and FR 21. The trail was once a side trail to the Long Trail, and is still in use by area residents for hiking, snowshoeing and cross country skiing. Lack of management and maintenance on the trail has caused erosion of the trail near the Mad Tom Brook. There are three stream crossings where bridges have washed out, and there are no designated parking areas for use of the trail.

The Dorset Mountain area is a 3,000 acre acquisition of NFS land on the west side of U.S. Highway 7. There is a network of trails that currently are not classified as managed National Forest System Trails. The trail system is listed in hiking books, and based on public collaboration and discussions with VFPR staff, an interest in connecting a Dorset Mountain Trail system to Emerald Lake State Park and developing a connector trail between the state park and

the GMNF and Appalachian Trail (AT) was identified. Some members of the public have expressed an interest in adding uses to the trails such as mountain biking and horseback riding. The trails traverse a number of wet and steep areas that do not have adequate drainage structures and trail treads. Some of the trails also have unauthorized uses (snowmobiles and ATVs). The trail system has the potential to form a loop system with a designated trailhead.

There is an opportunity to:

- Improve recreation opportunities and sustain a safe, efficient, and effective transportation system by reconstructing and retaining high quality trails that are used by the public, and by connecting these trails with Emerald Lake State Park.
- There is an opportunity to designate new trails in the East Dorset and Dorset Mountain area and expand partnerships to help maintain them.
- There is an opportunity to improve access by creating, expanding, and improving trailheads.

7. Scenery

Enhance Viewing Opportunities along Existing Roads and Trails

One of the top public activities on the GMNF is viewing scenery accessed by established vistas (Forest Plan EIS, pp. 3-211 and 3-306). Forest Plan Goal #15 is to "[m]aintain or enhance visual resources such as view sheds, vistas, overlooks, and special features" (Forest Plan, p. 16). Forest Service staff has identified opportunities to enhance viewing points along roads and trails including opportunities created by some past vegetation treatments. According to vista inventory data, the project area contains a few managed vistas along the AT and NFS roads. There are opportunities to create new vistas along roads and on the Dorset Mountain parcel.

There is an opportunity to:

- Provide new vistas by creating new openings along existing roads and trails.
- Maintain existing permanent and temporary openings along roads and trails to perpetuate views of scenery.
- Maintain and enhance the vista on Dorset Peak.

8. Transportation

Forest Plan Goal #14 is to "[p]rovide a safe, efficient, and effective Forest transportation system that meets both the needs of the public and the Forest Service (Forest Plan, p. 16). A Travel Analysis was completed for the Dorset Peru project area which includes a narrative of the existing condition and needs of the transportation system (Travel Analysis for the Dorset Peru Project, May 2011). The recommendations contained in the roads component portion of the Travel Analysis provide the basis for the transportation management needs within the Dorset Peru project area.

Improve Safety on Forest Roads in the Project Area

National Forest System Roads in the project area that need to meet federal Highway Safety Act standards for Forest Service objective/operational maintenance level (OML) 3, 4 and 5 roads, are in constant need of maintenance on a yearly basis. There is a need to review NFS roads and their uses in the area to determine whether the maintenance is in line with the use needs or whether some roads can be maintained less often and reduced to a lower OML with standards less than Highway Safety Act requirements. Additionally, Forest road signing within the general project area has aged over the years and is in need of updating to meet federal signing regulations. This mostly involves replacing worn and/or illegible existing signing with more highly visible (retro-reflective) signing.

There is an opportunity to:

- Review road maintenance levels to ensure Highway Safety Act standards are met where needed, and maintenance levels are reduced where they are not.
- Change and replace signing on many project area roads to comply with current signing regulations.

Align NFS Road Infrastructure with Current and Future Predicted Transportation Needs

Existing conditions and some changes in use of roads require the Forest Service to re-evaluate Road Management Objectives (RMO's) for each of the seven existing National Forest System Roads (NFSR) within the project area. Existing and future predicted conditions for the NFS Roads were analyzed in a Travel Analysis for the Dorset Peru Project completed in May 2011. This document makes recommendations for the future of the road system in the project area such as changes to RMO's, OML's, road and parking improvements, new temporary or permanent roads, and the decommissioning of roads.

There is an opportunity to:

- Implement recommendations made in the May 2011 Travel Analysis for NFS Roads within the project area.

Increase Cooperation with Local Governments on Management of the Forest and Town Road Infrastructure as it Relates to Forest Access

The Forest Service currently has a Road Cooperative Agreement with the Town of Peru in the project area. Participation with this town has mainly been on Forest Road 21 (Mad Tom Notch Road). There is a need to continue this cooperation with the Town of Peru and to also establish a new road cooperative agreement with the Town of Dorset to achieve Forest access improvements. Though overall Forest road budgets have fallen behind increased construction and maintenance costs, the Forest Service is committed to continuing cooperation when funding is available, and where there is mutual benefit to the public.

There is an opportunity to:

- Explore new opportunities for Road Cooperative Agreement participation with the Town of Dorset and continue work with the Town of Peru to:
  - ✓ Improve Forest access, reduce soil erosion.
  - ✓ Discourage unauthorized off-road motorized activity.

Unauthorized Non-System Roads

There are currently several existing unauthorized non-system roads and trails within the project area. The majority are short sections of former skid trails off Forest Roads 21, 58, and various Town roads adjacent to Forest lands that were not blocked or closed adequately when timber sales were completed. These non-system roads and trails are intermittently providing unmanaged recreational access to ATV's and 4 wheel drive vehicles, and causing localized rutting and soil disturbance. If the unauthorized use of these non-system roads and trails is not addressed, more serious soil disturbance and resource damage could occur.

There is an opportunity to:

- Address unauthorized roads and skid trails which are causing some localized soil disturbance (refer also to the Soil and Water Section).

9. Heritage

Enhance Protection, Stewardship and Knowledge of the Forest's Heritage Resources
Forest Plan Goal #16 is to "[p]rovide protection and stewardship for significant heritage resources on the GMNF" (Forest Plan, p. 17). This protection/stewardship generally takes the form of identifying, evaluating and occasionally interpreting heritage sites; ensuring that Forest Service management and other activities do not harm them; and in some cases stabilizing the remains, removing encroaching vegetation, and making them more visible for the public.

Heritage resources are the archaeological and historic sites, structures, features, artifacts and landscapes created by people who lived and worked on the land in the past. The Forest Service has an obligation to protect and manage heritage resources that are or may be significant. Heritage resource sites are considered significant if they meet the criteria for inclusion on the National Register of Historic Places; if so, they are referred to as "Historic Properties". More specifically, heritage resource sites on the Forest can include archaeological remains of Native American hunting and living sites, and sacred places; the remains of historic period farmsteads (such as cellar holes), mills, schools, cemeteries, stone fences/walls, transportation systems, charcoal kilns, and more; standing historic structures (such as buildings, fire towers, Civilian Conservation Corps (CCC) camps, Long Trail shelters, cairns, that are more than 50 years old); and (occasionally) entire landscapes that still reflect a past condition or land-use or significant event.

It is worth noting that sites on NFS lands tend to be better preserved than their counterparts on privately owned lands due to different developmental pressures and our legal obligation to provide stewardship. Therefore, over time, sites managed by the Forest Service become more significant because they represent an increasingly higher percentage of historic archaeological sites in the State that have good physical preservation.

Based on background information from our inventory of known sites, the use of the State-developed predictive/suitability model for the location of prehistoric archaeological sites, and broad scale field reconnaissance, we know that heritage sites occur in or near Areas of Potential Effect (project activity areas) throughout the Dorset Peru project area. This demonstrates both a need to protect, and an opportunity to enhance, these sites.

Both Western Abenaki and Mohican tribes (and their ancestors) used and laid claim to the area. Pre-contact Native American sites surely exist, but their visibility is very low. Despite numerous "finds" by individuals over the years there are very few formally documented or excavated sites. A suitability model indicates that the highest potential for preserved sites in the valleys and along significant drainages and wetlands.

The great majority of the known heritage resource sites in the project area date to the late 1700's through the 1800's and include the remains of numerous farms, stream-side mills, charcoal kilns, cemeteries, and marble quarries (although none of these latter sites are on NFS lands). Many of these sites are at least partially visible on the surface and represent a land-use history that is often largely unknown to many Forest users.

There is an opportunity to:

- Provide stewardship for heritage resource sites through mandated site inventory and protection.
- Increase site visibility and stability in the project area using volunteers, Vermont Youth Conservation Corps (VYCC) crews, and/or stewardship contracting at historic and "industrial" period sites (like the Cochran-Manley mill and kilns), and through coordinated

efforts related to releasing apple trees, establishing wildlife openings, and creating 'down woody debris habitat' near historic period sites.
- Increase public awareness of land-use history in the area through interpretation of the 19th century Bromley Book charcoal kilns along the AT/LT at the trailhead, and of the mills and other historic features along the proposed East Dorset/Mad Tom Trail.

III. PROPOSED ACTION

This section provides the description of proposed management activities that together define the proposed action that addresses the purpose and need for each resource category within the Dorset Peru project area. The proposed action section answers the questions: "what is being proposed, how and when is it to be implemented, and where is it located?"

1. Habitat Diversity

Appendix A, Table A-1 provides a summary of wildlife habitat treatments proposed within the Dorset Peru project area. Refer to Map 3 for treatment locations.

Diversify the Composition and Ages of Forest Types to Improve Wildlife Habitat
The harvesting of timber is proposed to diversify the composition and ages of forest types, which would improve overall compositional and structural diversity, and so improve wildlife habitat throughout the project area. The proposal includes the following activities:

- Increase early-successional (regenerating) habitat through clearcut, seed tree, and shelterwood harvesting on approximately **639 acres**.
- Enhance species composition and increase softwood habitat through approximately **576 acres** of single-tree selection or single-tree/group selection harvesting in hardwood, mixedwood, and softwood stands.
- Enhance early-successional habitats in the Remote Wildlife Habitat MA through the development of **107 acres** of "late-stage" openings (see below under Openings section).
- Enhance late successional habitats in the Remote Wildlife Habitat MA through **418 acres** of thinning and improvement cuts to extend the growth and longevity of trees in areas of extended rotations of 150 to 200 years.

Refer to the Timber Section for more detailed discussion of the proposed even-aged and uneven-aged harvest treatments. The following activities are also proposed to contribute to the improvement of the wildlife habitat within the project area.

Diversify Aspen Habitat
Regenerate aspen clones within approximately **69 acres** of existing hardwood and mixedwood habitats using a variety of silvicultural methods in order to enhance the abundance and distribution of this important but limited habitat feature. Clearcut and seed tree harvesting on 47 acres is proposed to create stands that have a high proportion of aspen, while thinning and improvement cuts on 22 acres would release aspen clones and create a more vigorous aspen component within each stand.

Enhance Oak Habitat
Enhance oak habitat within the Green Mountain Escarpment MA through regenerating one **28-acre** hardwood stand , C59/S11, using a shelterwood with reserves harvest while enhancing existing oak in the stand; and through increasing the abundance of oak on **185 acres** of hardwood, oak, and softwood stands, through the use of selection harvesting and improvement cuts. These latter two methods would release existing oak trees in the stands from competing

vegetation, increasing the proportion of oak in the stands and ensuring a healthy seed source for future regeneration and mast crops for wildlife.

Deer Winter Areas
Wintering habitat for white tailed deer would be maintained and enhanced through vegetation management to improve availability and quality of winter cover and browse. Only a small proportion of the State-mapped deer wintering areas overlap with NFS lands that are suitable for timber management within the project area. However, timber and vegetation management elsewhere in the project area would provide improved, year-round habitat for deer. Even-aged regeneration treatments (clearcut, seed tree, and shelterwood), would promote hardwood and aspen regeneration for browse. Some uneven-aged treatments (single-tree and group selection) would be laid out to encourage softwood regeneration that would provide winter cover. Permanent upland wildlife openings containing grasses, forbs, and shrubby browse provide important year-round habitat for deer, even if they are not within or adjacent to mapped deer wintering areas. Refer to the Timber Section for discussion of the proposed even-aged and uneven-aged harvest treatments and to the Restore and Expand Existing Permanent Upland Openings in this section.

Restore and Expand Existing Permanent Upland Openings
The proposal would restore 10 stands of existing upland openings for a total of **51 acres.** This would be accomplished through mechanical mowing; cutting with chainsaws, brush saws, or hand tools; prescribed burning; or a combination of these treatment methods. Each stand would receive one to three treatments over a period of 5 to 7 years with some stands receiving multiple treatments in the same year. The treatment type, the number of treatments and the timing of treatments would depend on existing conditions compared to desired vegetative composition and structure identified for each stand.

Additionally, the proposal includes the creation of 15 new permanent upland openings with a combined total of about **224 acres** some of which would incorporate existing adjacent upland openings. Most of these openings would be between 10 and 20 acres in size. These larger openings provide a relatively-greater benefit to wildlife than smaller openings, and future maintenance would be more cost effective. Once established, these newly created permanent upland openings would be restored as needed using the same treatment methods proposed for existing upland openings.

The proposal also includes six stands in C56 and eight stands in C62 for a total of **107 acres** (a portion of the 224 acres above) designated for “late-stage” permanent upland openings. For each group, stands would be regenerated on a 7-year schedule so that at any given time one stand would be 0 to 6 years old, one would be 7 to 13 years old, and one would be 14 to 20 years old. These stands would increase the continuing availability of older early-successional habitat (7 to 20 years) that would complement the permanent upland openings maintained on annual to five-year schedules and temporary openings created through silvicultural treatment that grow through early-successional stages to mature forest.

Apple Tree/Soft Mast Release and Pruning
The proposal includes release and pruning of apple trees at three sites (C58/S106 and C62/S101 and S103) where they are known to occur. It is anticipated that more apple trees would be discovered during project inventory, planning and implementation. Any newly-discovered apple trees would be considered for inclusion in the proposal for release and pruning activity. Treatment would include removal of over-topping trees that shade the apples, as well as small saplings and pole-size trees near or under the canopy of individual apple trees. This

work would be completed using hand tools such as bow saws, chain saws, and other portable cutting devices designed for removal of woody vegetation.

Create Down Woody Debris Habitat
Cut and remove trees growing in and near select historical sites such as foundations of homes or mills, stone walls, charcoal kilns, etc. (refer to the Heritage Section). Trees cut to maintain these structures would be left on site and placed in such a way as to provide nesting, foraging, and travel habitat for small mammals, reptiles, and amphibians.

2. Timber

The proposal includes a variety of timber stand treatments on a total of **2,534 acres** to provide forest products to the local and regional economy, improve forest health and diversity, and to move the existing forest habitat composition and age class toward the objectives as provided in the Forest Plan and HMU analysis. Appendix A, Table A-2 lists the proposed harvest treatments, number of harvest acres for each Compartment/Stand and the actual treatment acres proposed for each harvest method. Table A-3 summarizes proposed harvest treatments. Table A-4 lists proposed stand improvement (TSI) and tree planting activities. Table A-5 lists site preparation for natural or artificial regeneration proposed for all stands receiving regeneration cuts. Map 3 shows the locations of the timber harvests and other treatments proposed within the Dorset Peru project area.

Harvest Treatments
The following is a summary of the proposed harvest treatments and methods within the Dorset Peru project area:

1. Uneven-aged Harvest Treatments

There are a total of **783 acres** of uneven-aged harvest treatments proposed. An uneven-aged system is a silvicultural system involves manipulation of a forest to simultaneously maintain: a) continuous high-forest cover, b) recurring regeneration of desirable species, and c) orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting methods that develop and maintain uneven-aged stands are single tree selection and group selection.

- **Approximately 576 acres of single tree selection** would be conducted in twenty-three hardwood stands, one oak stand, one softwood stand, and one mixedwood stand. This harvest method removes selected single trees and groups of several trees at a time from three different size classes (poles 6 to 10 inches in diameter at breast height (DBH), small sawlogs up to 16 inches DBH and larger trees greater than 16 inches DBH. Basal area (BA) would be reduced to about 70 square feet per acre for hardwood stands, to about 100 square feet per acre in mixedwood stands, and to a range of 100 to 120 square feet per acre in softwood stands.

  The cutting and removal of these trees would create small gaps in the forest canopy about 1/10 to 1/5 acre in size. This action would produce sawtimber and pulpwood products, and reduce overall stocking of trees to appropriate levels for small amounts of sunlight to reach the forest floor. This would favor mostly regeneration of shade tolerant species of trees in the understory such as sugar maple, beech, hemlock, spruce and fir; and create a stand of trees of different sizes and ages.

  Where inclusions of aspen may occur or where shade intolerant species such as paper birch, or black cherry exist; the gaps created with this method would be slightly larger,

creating gaps in the canopy no larger than a 1/4 acre. This would favor the growing of aspen and desirable shade-intolerant hardwood that requires more sunlight. This method would be applied to hardwood stands (comprised of beech, birches, maples, ash, and oak); mixedwood stands (comprised of hardwoods mixed with white pine, spruce, fir and hemlock); and in softwood stands (comprised of mostly spruce, fir, white pine and hemlock).

- **Approximately 207 acres of group selection** would be conducted in five hardwood stands and one softwood stand. This harvest method, similar to the larger gaps described above, would harvest small groups of trees 1/4 to 2 acres in size and favor the growing of shade intolerant (sun-loving) species such as aspen, paper birch, and black cherry and intermediate shade tolerant species such as red maple, yellow birch, red oak, white ash, and white pine.

2. Even-aged Harvest Treatments

There are a total of **1,527 acres** of even-aged harvest treatments proposed. An even-aged system is a silvicultural system that produces stands in which all trees are about the same age; that is, the difference in age between trees forming the main crown canopy level will usually not exceed 20 percent of the rotation length.

Intermediate Cuts – *the removal of trees from a stand sometime between the beginning of formation of the stand and the regeneration cut. Types of intermediate cuts include thinning, release, and improvement cuttings*.

- **Approximately 360 acres of thinning** would be conducted in 13 hardwood stands and one softwood stand by removing individual trees to provide pockets of sunlight, growing space for improving growth on reserved trees while enhancing forest health through salvage of some dying trees. Basal area would be reduced to about 70 square feet per acre for hardwood stands, to about 100 square feet per acre in mixedwood stands, and to about 120 square feet per acre in softwood stands.

- **Approximately 506 acres of improvement cutting** would be conducted in 25 hardwood stands and three mixedwood stands by removing individual less desirable trees to improve the composition and quality of the trees within the stand. Residual spacing would be similar to a thinning treatment.

Regeneration Cuts – *trees are removed from the stand to create conditions that will allow the forest to renew or reproduce itself.*

- **Approximately 515 acres of shelterwood** would be completed in 19 hardwood stands. Shelterwood harvests regenerate low quality stands and mature stands that are declining in productivity through a series of two or three cuts. The types of treatments could include: 1) an optional preparatory cut to enhance conditions for seed production, 2) an establishment cut to prepare the seed bed and to create a new age class, and 3) a removal cut to release established regeneration from competition with the overstory. These shelterwood stands would be separated by forested conditions and manageable stands so that they do not border each other.

    - ✓ **Shelterwood preparatory cut (three-cut treatment)** in 4 hardwood stands (103 acres). An initial light preparatory cut that enhances conditions for seed production and/or develop windfirmness for a future shelterwood establishment cut and eventual removal cut.

- ✓ **Shelterwood establishment cut (two-cut treatment)** in 13 hardwood stands (363 acres). Approximately two thirds of the trees would be removed within each of these stands with the first cut leaving about 30 to 40 square feet of basal area per acre in residual hardwood or mixedwood stands for seed and shelter trees. About 30 to 40 percent of existing BA per acre would be removed in softwood stands. The remaining trees providing seed and shaded "shelter" to the new crop of understory trees may be harvested in about 3 to 5 years following initial harvest if compatible with other resources and after regeneration has been established.

- ✓ **Shelterwood with reserves** would be completed in two hardwood stands (49 acres). Approximately two-thirds of the trees would be removed within these stands leaving about 30 to 40 square feet of BA per acre in residual hardwood stands for seed and shelter trees. The remaining trees provide seed and shaded "shelter" to the new crop of understory trees. No overstory removal is planned. The remaining portion of the stand is retained at least 20 percent into the next rotation of the new stand, usually 40 to 60 years and could be removed at that time during the first thinning of the new stand as larger sawtimber.

- **Overstory removal on 22 acres** (from advanced regeneration) would be completed in one hardwood stand. Overstory removal is the cutting of trees constituting an upper canopy layer to release understory trees. The primary source of regeneration is advance reproduction. This is a result of a stand that was previously harvested.

- **Approximately 95 acres of seed tree** would be completed in four hardwood stands. Seed tree harvests remove most of the mature timber from an area in one cut except for a small number of desirable trees retained to provide seed or shelter for regeneration. These seed tree stands would be separated by forested conditions and manageable stands.

- **Approximately 29 acres of clearcuts** would be completed in two hardwood and one mixedwood stand to regenerate the aspen/birch type and release existing softwood regeneration. The regenerated clearcut stands would have most trees removed leaving about 10 to 15 square feet of BA per acre in desirable trees. In addition, patches of trees would be left uncut within about 10 percent of the stands to meet other wildlife, visual, soil and water Forest Plan standards and guidelines.

3. Land Clearing to Convert Forest to Openings

Approximately 224 acres of harvest without restocking would be completed in 19 hardwood stands, two softwood stands, one mixedwood stand. The timber harvest would be followed by land clearing to convert forested stands to permanent upland openings of early successional habitat. Patches of trees would be left uncut within about 10 percent of the stand area to meet other wildlife, visual, soil and water Forest Plan standards and guidelines. These stands would be separated by forested stands.

4. Estimated Timber Volume

The amount of sawlogs and pulpwood that could be produced from all uneven-aged and even-aged treatments is estimated to be 10.651 million board feet (MMBF) or 17,752 hundred cubic feet (CCF). The breakdown of wood products is approximately:

- 11,716 CCF of sawlogs
- 6,036 CCF of pulpwood

Another measurement some may be more familiar with is:

- 7,030 thousand board feet (MBF) of sawtimber
- 7,640 cords of pulpwood (divide pulp wood volume by 2 to get an MBF equivalent)

Connected Actions

Connected actions are management activities that are automatically triggered by other actions. The following activities are connected actions within the Dorset Peru project area as a result of proposed timber harvest treatments (Appendix A, Tables A-4 and A-5):

Post Harvest Activities (Stand Improvement, Permanent Opening Creation, Site Preparation, Stocking Surveys, and Tree Planting):

- Stand Improvement: There are approximately **90 acres of stand improvements** (precommercial thinning) proposed to improve the composition, structure, condition, health and growth of young even-aged stands. These stands are generally less than 25 years old, created from past even-aged regeneration harvests. Within these stands, crop trees of desired species would be selected on a spacing of about 16 x 16 feet. Less desirable competing trees touching the crowns of the crop trees would be cut away to allow for better growth of selected crop trees intended to become a component of future commercial harvest.

- Site Preparation: There are approximately **1,439 acres of site preparation** proposed to provide for natural or artificial regeneration of harvested stands. Following harvest by the shelterwood, single/group selection, and clearcut methods; saplings of tree species 1 to 6 inches DBH that may be bent or broken, not commercially valuable or less desirable would be cut within one year following the harvest. This preparation of the site allows more space and sunlight for the establishment of more desired timber species.

- Permanent Opening Creation: There are approximately **224 acres of vegetation clearing** proposed to complete the creation of permanent upland openings after the stands have been harvested. Following harvest, saplings of tree species 1 to 6 inches DBH that are not needed for wildlife would be cut within one year following harvest. This post-sale treatment allows for the growth of early successional habitat. Stumps would be left in openings or piled in wind rows, and/or slash burned followed by seeding.

- Stocking Surveys: Tree stocking surveys would be conducted following the first and third year of harvest to monitor regeneration success in all stands proposed for regeneration treatments (clearcuts, shelterwoods, shelterwood with reserves, overstory removals, single tree selection, and group selection harvest methods).

- Tree Planting: Although unlikely, if stocking surveys determine natural regeneration is not adequate in any of the regeneration harvest treatment areas (clearcuts, shelterwoods, shelterwood with reserves, overstory removals, single tree selection, and group selection harvest methods), tree planting would be necessary. To have adequate stocking, a stand should have at least 50 percent of the plots with at least one acceptable growing stock by the third year after harvest. If planting is necessary, a mix of native softwood species would be planted on a 4 foot by 4 foot spacing in areas proposed for regeneration to softwoods or mixedwood. The mix of native softwoods would improve cover and forage availability for big game. In areas to be regenerated to hardwoods, desired species would be planted. In the case of the proposed clearcuts, quaking aspen and paper birch are the desired hardwood species. Direct seeding through broadcast or aerial means is another option to hand planting.

Transportation Network: Town roads, NFS Roads and skid roads/trails would be used for log truck access to existing log landings. Existing log landings and skid roads/trails that meet current Forest Plan Standards and Guidelines would be used again for logging. There is a need to locate and construct new log landings, and some sections of skid roads/trails to access all areas being considered for harvest. It is anticipated that approximately 12 to 16 existing log landings would be used, and 3 to 6 new log landings would be constructed to meet the needs associated with proposed harvest treatments. Specific locations for new landings and skid roads/skid trails would be mutually agreed to by the sale(s) purchaser and the Forest Service.

The construction of temporary roads, and any improvement and/or maintenance needs associated with the existing transportation network to support timber harvest activities are discussed in the Transportation Section.

Implementation of Harvest Treatments (Timing)
The harvesting proposed within the project area would be packaged in a series of timber sales and/ or stewardship contracts and agreements which would be conducted within a 5 to 7 year period. This project lends itself to the implementation of several timber sales or stewardship contracts/ agreements of various sizes. The size and timing of the contract offerings and implementation of harvests would be determined by market conditions, interest and collaboration for stewardship contracts, and feedback from timber purchasers.

3. Fisheries

Refer to Maps 2 and 3 for the locations of proposed fisheries habitat treatments.

Placement of Large Woody Debris
To increase existing LWD amounts from 70 to 93 pieces per mile to approximately 200 pieces per mile a total of about 894 trees are proposed to be cut along streamside areas and placed as large woody debris (LWD) in sections of Mad Tom and Little Mad Tom Brooks, and in the headwaters of the Mettawee River (total stream length of approximately 7.2 miles). This would restore stream processes and LWD functions, such as creating pools, adding protective cover, and trapping and sorting of spawning gravel. This would include the following activities:

- Mettawee headwaters: Cut and place approximately 112 trees into sections of the stream along 0.86 miles (4,541 linear feet).
- Little Mad Tom Brook: Cut and place approximately 197 trees into sections of the stream along 1.84 miles (9,715 linear feet).
- Mad Tom Brook: Cut and place about 585 trees into sections of the stream along 4.50 miles (23,760 linear feet).

Of the trees to be felled, about half would be a minimum of 12 inch diameter at breast height (DBH) with the other half between 8 to 12 inches DBH. The primary placement of trees would be accomplished through directional felling. A grip hoist or log carrier may be used to assist in placing the trees in desired stream locations. Heavy equipment would not be used in the placement of LWD.

Provide Fish Passage
Replace or retrofit three culverts to provide upstream aquatic organism passage in: 1) a tributary of Mad Tom Brook on an undesignated trail on a portion of the “East Dorset Trail”; 2) Farnum Brook on Town Highway #14 in Peru; and 3) in the headwaters of the Mettawee River on Tower Road in Dorset. Fish passage improvement work at culverts may require the use of heavy

equipment where access and stream size would render such activities feasible and necessary. Project work would include completion of detailed, existing condition assessments, designing of retrofits to existing structures or replacement crossing structures in the same location, and constructing the retrofits or replacements. Replacement structures would be bottomless arch culvert designs or bridges.

4. Non-Native Invasive Plants

Non-native invasive plant (NNIP) control on NFS lands within the Dorset-Peru project area have been previously authorized in the Forest-wide Non-Native Invasive Plant Control Project Decision Notice dated October 19, 2010. Under this decision, any existing or future NNIP infestations located on NFS lands within the project area may be treated using a variety of control methods (mechanical, manual, physical, prescribed fire, chemical, biological, or domestic grazing). No specific treatments are planned for implantation at this time.

NNIP control on non-NFS lands will be considered pending the identification of willing landowners and/or partners.

5. Soil and Water

Soil and wetland rehabilitation work would be integrated into several Recreation and Transportation proposed projects (see these sections for additional information). Table 4 shows the proposed activities related to soil and water improvement within the project area. Refer to Maps 2 and 3 for locations of activities.

Table 4. Proposed activities related to soil and water improvement.

Site and Location	Proposed Action and Reason for Project
1. Dorset Peak East (old skid road where it climbs up the ridge and old woods roads in wetland areas).	Close and restore all portions of this old skid road not incorporated into the NFS trail system. Water bars would be installed to prevent existing and future erosion on the closed and restored sections. The State of Vermont and U.S. Army Corps of Engineers would be consulted to evaluate all actions in and near wetlands. Estimated length of the skid road to be closed is 0.5 mile.
2. East Ridge (old skid road).	Close and restore (includes water-bar construction) all sections of road not incorporated into the new NFS trail system. Estimated length of the skid road to be closed is 0.25 mile.
3. Hannah's Crotch (old skid road).	Close and restore (includes water-bar construction) all sections of road not incorporated in new trail. Estimated length of old skid road to be closed is 0.1 mile.
4. Beech Ridge Access (currently a town pent road that accesses several camps on Beech Ridge).	Close un-needed segments of the old skid/woods roads (on NFS land) leading off of the Beech Ridge access road, using earthen berms or boulders. Install signs at each closure identifying appropriate road uses (for example, hiking, and cross country skiing). This would help stop illegal ATV/ORV use, and allow the soil and vegetation to be restored. Estimated length of skid/woods roads to be closed is 1.25 miles.

Site and Location	Proposed Action and Reason for Project
5. Forest Road 285 (a Forest Service right-of-way, the first section of which is a town trail).	Close this road using an earthen berm or boulders, at the start of NFS ownership. Install water bars to prevent existing and potential future erosion, and control illegal ATV use. Estimated length of road to be closed is 0.5 mile.
6. Old Mad Tom Trail/ Proposed East Dorset Trail (formerly a town road as well as NFS Trail).	Close, remove culverts, and install water bars on sections of this trail not incorporated into proposed new NFS trail system. Closing these sections would allow soils to stabilize and re-vegetate over time, reducing the risk of eroded soil reaching the stream. Estimated length of trail to be closed is 0.5 mile.
7. Pierce Road Extension (woods road accessing NFS land, off the end of the traveled portion of Pierce Road).	Install drivable water bars and drainage ditches to minimize current and future erosion. Estimated length of road to be improved is 1.0 mile.

Critical soil areas, such as stream crossings or steep road grades, would be seeded and mulched to quickly stabilize and revegetate the area. Projects would be implemented within the next 2 to 5 years. All projects would be implemented using an excavator, with the possible exception of the Old Mad Tom/ East Dorset Trail where some work could be done by hand. Seeding and mulching of critical soil areas and the installation of signs would be done by hand.

6. Recreation

Refer to Maps 2 and 3 for the locations of proposed recreation activities.

East Dorset Trail
The Forest Service proposes to redevelop the trail along Mad Tom Brook renaming it the East Dorset Trail since the snowmobile trail that runs from FR 21 to Mad Tom Road is now known as the Mad Tom Trail. The project would involve reestablishing 3.1 miles of trail including drainage work, brush removal, and trail tread stabilization; and the development of 0.5 miles of new trail eliminating two stream crossings and moving the trail away from the brook to a more sustainable trail location. Forest Service staff anticipates trail reconstruction to be done using a small tractor/excavator where feasible, and hand tools on most areas of the trail due to the terrain. A bridge is proposed for the one stream crossing that would still be required. This crossing may initially be constructed with stepping stones until funding is available to construct the bridge.

The project would require the creation of two trailheads, one off of Mad Tom Road in East Dorset in the Dorset Town trail right-of-way so that people do not park along the road, and another trailhead on FR 21. The trail is proposed to be a primitive hiking, snowshoeing and cross country skiing trail. The trail has a number of historic features providing opportunities for interpretation. The East Dorset Trail meets the Mad Tom Trail near FR 21.

Emerald Lake Connector Trail
The Forest Service proposes to develop a connecting trail between the Mad Tom Trail and Emerald Lake State Park. Trails in the State Park could then link to the Dorset Mountain trails. The connector trail would go through the NFS land on Bowen Hill Road. The land is an open meadow and it is anticipated construction would only require hand tools and brush hogging a path.

Dorset Mountain
Dorset Mountain currently has a number of old skid roads and unmanaged hiking trails that are featured in day hiking guides and used for hiking, snowshoeing and skiing. Many of the trails are steep, eroded or wet. The Forest Services proposes to develop a loop trail system with access at the end of Tower Road, Grouse Lane, Emerald Lake State Park and Dorset Hill Road. The project would rehabilitate nine miles of existing trail including drainage work, brush removal, puncheons, and trail tread stabilization; and the development of 1.5 miles of new trail to connect the existing trails and trailheads at a sustainable grade. Trail construction is anticipated to be accomplished using hand tools on much of the trail due to the steep terrain, and a small tractor/excavator may be used where feasible.

An existing parking area on Grouse Lane would be improved and used as a trailhead. To prevent unauthorized motorized use that is currently occurring on NFS lands, gates or barriers would be installed at the beginning of the trail from the Grouse Lane trailhead and the southeastern spur trail that provides access to the legal trail 6. Uses of the trail will be determined with further site reconnaissance, and is anticipated to be hiking and potentially mountain biking and horseback riding on some trail segments. The loop trail features a vista from the summit of little Dorset Peak and could connect to Emerald Lake State Park at some point in the future.

7. Scenery

Refer to Maps 2 and 3 for locations of proposed scenery management treatments.

Vista Maintenance and Creation
The Forest Services proposes to enhance visual resources in five areas by creating openings or selective cutting of trees.

- West side of FR 21 next to a pull-off: Establish a 180 degree vista in C61/S22, S42, S43, and S45 by creating a three to seven acre opening using large mechanical cutting devices (commonly called a “brontosaurus”) or through commercial timber harvesting.
- West side of FR 58 across form a pull-off: Establish a vista in C58/S28, S29, S30 and S31 by creating a two to five acre opening using a brontosaurus or through commercial timber harvesting.
- East side of the AT/LT: Establish a vista in C56/S20 through selective cutting and pruning within 200 feet of the trail tread using hand tools.
- Dorset Peak: In C196/S16 and S998 maintain and enhance the existing vista by creating small openings and selective cutting using hand tools.
- Northern knob of Netop Mountain: Establish a vista in C195/S8 and C206/S1 on the west side of the proposed trail by creating a one to two acre clearing using hand tools.

8. Transportation

Refer to Maps 1, 2 and 3 for location of existing road network and key proposed transportation related activities. All proposed road activities would be implemented using customary mechanized power equipment and machinery unless noted otherwise.

Improve Safety on Forest Roads

- Review area roads for current and expected use and budgets, and assign an Objective/Operational Maintenance Level (OML) appropriate for each road to ensure the Forest’s ability to maintain roads according to Highway Safety Act standards where needed.

- Remove and replace any non-compliant traffic and route marker signing on all existing or new project area NFS roads with new, more highly visible (retro-reflective) signing. Add any new signing as required by the current edition of the Manual on Uniform Traffic Control Devices (MUTCD).

Align NFS Road Infrastructure with Current and Future Predicted Transportation Needs
The assignment of an Operational Maintenance Level (OML) to roads provides guidance on how it should be managed and maintained. In summary, OML 3, 4 and 5 roads are managed and maintained for passenger vehicles; OML 2 roads are managed and maintained for high clearance 4-wheel drive vehicles; and OML 1 roads are closed to vehicles although they can occasionally be opened as intermittent service roads. More detailed descriptions of OML 1 to 5 roads can be found in the Dorset Peru Travel Analysis (May 2011, p. 9); the Forest Plan, p. 153; and in FSH 7709.58.

- National Forest System Road (NFSR) 21: To better align use with short and long term road maintenance costs, change road maintenance activities from OML 3 (passenger car) to OML 2 (high clearance) from milepost 2.77 to 5.48. The character of the road would be allowed to change slowly over time. NFSR 21 section under Forest Service jurisdiction from milepost 2.65 to 2.77 would remain as OML 3 to provide passenger car surface to proposed new trailhead parking area. Create an approximately 25 feet by 70 feet, five car, three season trailhead parking area along NFSR 21 at approximately milepost 2.76 for proposed East Dorset Trail down to Dorset Legal Trail 10 and Forest Road (FR) 259 Mad Tom Road in Dorset where the Town may consider a trail head and parking area. Install a new 24 foot, single arm road gate at milepost 2.65 (end of Town road jurisdiction) just east of the FR 58 intersection to protect NFSR 21 and NFSR 58 road surfaces during late winter and mud season. During road maintenance planning and activities, improve or replace larger road culvert pipes (greater than 48 inches in diameter) carrying live streams to allow aquatic organism passage.
- NFSR 21A: Keep this spring-fall parking area off the Town of Peru portion of FR 21 Mad Tom Notch Road at OML 3 continuing to maintain it for public and administrative passenger car use.
- NFSR 21B: Keep this winter parking area off the Town of Peru portion of FR 21 Mad Tom Notch Road at OML 3 continuing to maintain it for public and administrative passenger car use, allowing for winter plowing and maintenance by the Town of Peru or under agreement with VAST.
- NFSR 21C: Improve and add this existing road off FR 21 at mile 1.661 and to the south and right-of-way to U.S. Tracts 31 and 31b to the National Forest System (NFS) of roads as a 0.60 mile long, OML 1 road for important administrative access to Compartments 56 and 62 for creation and maintenance of wildlife openings. Work would include ditching, template shaping, grade dips, and spot graveling to allow high clearance (4WD) administrative access. Install a 14 foot, single arm road gate at the entrance near FR 21 to prevent unauthorized public motorized access.
- NFSR 58: Keep at OML 3 (2.07 miles) continuing to maintain road to Highway Safety Act standards. Expand the parking area near the trailhead at the end of the road by 40 feet to the south making a new lot that is 25 feet deep by 70 feet long to accommodate existing and future use. This expansion would allow the lot to comfortably accommodate up to five cars. During road maintenance planning and activities, improve or replace larger road culvert pipes (greater than 48 inches in diameter) carrying live streams to allow aquatic organism passage.
- NFSR 79: Change from OML 2 to OML 3 and improve and maintain to Highway Safety Act standards to allow for improved access to the Hapgood Pumphouse facilities

adjacent to the road. Remove the northern curb-cut and entrance from FR 22 North Road (Town Highway 4) maintaining only the southern entrance.

- NFSR 258: Improve and add this existing road off FR 258 Pierce Road (TH18) at mile 0.42 and to the north and right-of-way to U.S. Tract 27 to the NFS boundary as a 0.50 mile long OML 1 road (NFSR 258) for important administrative access to Compartment 62 for creation and maintenance of wildlife openings. Work would include ditching, template shaping, grade dips, and spot graveling to allow high clearance (4WD) administrative access. Install a 14 foot, single arm road gate north of TH 18 end to prevent unauthorized public motorized access.
- NFSR 283: Decommission as NFSR in Forest road database (0.50 miles of OML 1), but retain right-of-way to U.S. Tract 41 (Compartment 50) for possible future access needs. Establish where right-of-way is located. Use of access and right-of-way to U.S. Tract 41 (Compartment 50) would be via a temporary haul road that would be discontinued and closed-off after use.
- NFSR 285: Decommission as NFSR in Forest road database (1.0 miles of OML 1) but retain all right-of-way rights to U.S. Tract 64 (Compartment 57) for administrative access needs. This is Dorset Legal Trail 8 (0.97 miles long) and should not be in Forest database as NFSR. Work with the Town of Dorset and private landowners on existing gate and other access issues to clarify responsibilities and obligations.
- NFSR 286: Keep at OML 3 continuing to maintain road to Highway Safety Act standards. Increase the size of parking area by 20 feet on the northern side and by 60 feet on the eastern side. This would be an increase to the parking lot size from the existing 70 feet by 140 feet to 90 feet by 200 feet, or an 8,200 square foot (0.01 mile long) increase. Expansion of the parking lot is to serve the existing and a future expected increase in winter snowmobile parking needs for the area.
- NFSR 461: Add a new road to the NFSR in the Dorset Mountain area (U.S. Tract 271) off of Dorset Town Highway 10 (Tower Road) via Grouse Lane (existing Appurtenant Easement No. 3 to U.S. Tract 271) and an existing 0.12 miles native surface road on NFS lands. Improve an existing 50 feet by 150 feet parking area/trailhead at the end of this road on NFS lands for public access to the proposed Dorset Mountain trails. The road would be improved and maintained to OML 3 requirements and would be approximately 0.32 miles long (including Grouse Lane portion). The parking lot would accommodate up to 10 cars.
- Construct the following temporary haul roads for timber access:
  - ✓ U.S.Tract 63 temporary haul road access: Implement temporary haul road access to a landing area on NFS lands under a timber sale or stewardship contract off of NFS right-of-way at end of Chandolin Road (Winhall TH 72) for access to Compartments 59, 60, and 63.
  - ✓ U.S. Tract 214 temporary haul road access: Implement temporary haul road access to landing areas on NFS lands under a timber sale or stewardship contract to U.S. Tracts 214, 463, and 485 in Compartments 57 and 59 via Beech Ridge Road (a town pent road). This would likely require petitioning the Selectboards of Manchester, Winhall, and Dorset for use of the road for this purpose.
  - ✓ U.S. Tract 394 temporary haul road access: Pursue curb-cut permit from Town of Dorset off of FR 259 (TH 5) Mad Tom Road near Bowen Hill Road (TH 17) for access to U.S .Tracts 394b and 294c in Compartment 39. Implement temporary haul road access to a landing area on NFS lands under a timber sale or stewardship contract off this curb-cut.
  - ✓ U.S. Tract 10c temporary haul road access: Implement temporary haul road access to landing area in Compartment 58/61 via use of the existing FT 355 snowmobile trail/new East Dorset trail. This temporary haul road enters FR 21 at milepost 2.77.

- Improve access to NFS lands over new permanent or temporary access permits or easements at the following areas:
  - ✓ North off SR 11/30 east of the SR 11/30 and Bromley Forest Road intersection for potential access to Compartments 59, 60, and 63
  - ✓ North off SR 11/30 west of the SR 11/30 and FR 286 intersection for potential access to Compartment 63
  - ✓ North off SR 11 east of the SR 30 and SR 11 intersection for potential access to Compartments 63 and 64.
- Construct temporary short haul roads to new and existing landings to provide access for timber management. Previously used temporary roads would need to be reopened to access existing landing locations that meet current standards for use. Temporary roads would be restored to pre-sale conditions after use according to Forest Plan Standards and Guidelines as a part of the timber sale to prevent unauthorized motorized use. Skid roads leading from these temporary roads and log landings would be closed off at the completion of harvest activities to prevent unauthorized vehicle use into the Forest.

Increase Cooperation with Local Governments on Management of the Forest and Town Road Infrastructure as it Relates to Forest Access

- Dorset Town Highways: Explore a Road Cooperative Agreement with the Town of Dorset to possibly include Town roads and trails providing trailhead access to NFS lands at Legal Trail 10 off Mad Tom Road and Town Highway 10 Tower Road or roads providing timber access off Legal Trail 8 Tennis Way or the Beech Ridge Pent Road. Depending on success of any proposals for new trails, trail heads, parking areas, and aquatic passage culvert work, it may be in the interest of both the Forest Service and the Town to cooperate on any associated road improvement or maintenance needs where funding is available and there is a mutual interest.
- Peru Town Highways: Explore increased cooperation on FR21 Mad Tom Notch Road and FR 258 Pierce Road through the existing Road Cooperative Agreement with the Town of Peru to reduce soil erosion and any unauthorized off-road, 4 wheel drive and ATV activity and provide for timber and wildlife management access to NFS lands in Compartments 56, 58, 60, 61, 62, and 63. Improvements, with Town approval, could include spot graveling, road template shaping, water bar, culvert, and ditching work, brushing, and other similar road maintenance activities.
- Winhall Town Highways: Explore possibilities for cooperation on Town roads accessing Compartments 57, 59, 60 and 63. These would be TH 72 Chandolin Road, TH 57 Bromley Forest Road, and the Winhall portion of the Beech Ridge pent road.
- Manchester Town Highways: Explore possibilities for cooperation on Town roads accessing Compartments 57 and 59. This would be the Manchester portion of the Beech Ridge pent road.

Close Unauthorized Non-System Roads

Close-off any unauthorized roads and skid trails at or near the main road entrance by: placing large boulders (or similar physical barrier); re-planting some native vegetation; and re-establishing the main road template and/or ditchline as needed. Until the vegetation is established small, temporary travel management signing may be installed to discourage unauthorized use. Small, single car pull-off areas may be created (when needed) at existing unauthorized road entrances where the pull-off can be located by extending the shoulder of the main road (without cuts or fills) and where they will not be separated by ditches or drainage structures. Law enforcement would monitor the various locations for illegal use.

9. Heritage

The Forest Service strives to meet the Forest Plan Heritage Resource Goal #16 (and Section 106 of the National Historic Preservation Act) by being proactive in promoting and enhancing Heritage resources, and protecting historic and archaeological sites which meet, or could meet, the criteria for inclusion on the National Register of Historic Places. Refer to Maps 2 and 3 for the locations of proposed heritage resource site related activities. We also consult with federally recognized Native American tribes (primarily the Mohican) and engage in dialogue with our in-State Abenaki tribal partners.

Proposed activities associated with heritage resources within the project area include the following:

- Conduct maintenance and restoration work at two small historic cemeteries located within the project area: one located at Emerald Lake State park and the other on private land along Dorset Mountain Road. This action involves manual labor to clean stones, pick up litter, re-erect fallen stones and, on occasion, mend a broken stone. Labor would be provided as part of our Passport in Time "Remember Me As You Pass By" adult volunteer program, and direction provided by the Forest Archaeologist.
- Stabilize two mill sites along the proposed East Dorset Trail. The remains of the Woods Mill (along the Trail) and the Cochrane-Manley mill (just off the Trail, in association with 3 charcoal kilns) would be treated by removing vegetation (generally small, non-merchantable saplings, poles and brush) by hand/hand tools, and cutting an occasional encroaching hardwood, thus stabilizing structural remains. Brush would be stacked to create down woody debris habitat. This could be accomplished through partnerships, stewardship contracting and/or Vermont Youth Conservation Corps (VYCC) crews.
- Preservation of stone work along the East Dorset Trail as part of the trail rehabilitation. Technical advice from historic preservation specialists at the State Historic Preservation Office will be solicited.
- Site stabilization of the East Dorset Blast Furnace. This proposal consists primarily of the removal of a dozen small trees growing out of the remains of this significant industrial site. The site is owned by the State, so this project would need to be cleared by and coordinated with Emerald Lake State Park.
- Clean up and stabilize the historic house site remains located at the corner of Mad Tom and Bowen Hill Roads: This center-chimney foundation may represent the Wheeler homestead, and is currently obscured by dead-and-down trees, brush, weeds and some litter. Two or three hardwood trees within the foundation area may need to be removed by a certified sawyer. Brush would be stacked to provide down woody debris habitat.
- Contribute historic interpretive material about the East Dorset Trail and historic sites along it, relying on existing documentation and the Dorset Historical Society.
- Clean up and interpret the well-preserved Bromley Brook charcoal kilns remains along the AT/LT just north of the trailhead at SR 11/30. "Clean up" activities would consist of the removal of small saplings, dead-and-down material, and weeds. Interpretive material would be posted at the trailhead bulletin board, not on-site.
- Conduct prehistoric site inventory activity. While much of the project area appears to have relatively low potential for the presence of prehistoric Native American sites, it surrounds private and State lands along the Battenkill River which have high potential for such sites. A limited test pit survey – less than 100 small (50cm sq) test pits at 10m intervals, dug to an average depth of 50cm - would be conducted on NFS lands (the former O'Neal farm) due to high potential there.

Appendix A: Summary of Proposed Wildlife Habitat and Timber Management Treatments

Table A-1: Proposed Wildlife Habitat Treatments.

Comp	Stand	Acres	Treatment Acres	Additional Information
Apple tree/soft mast release and pruning: Release and prune all apple trees throughout the stand.				
58	106	1	1	Partly (approximately 1/3) within inventoried roadless area (IRA).
62	101	1	1	
62	103	1	1	
--	--	--	--	Other stands found to include apple trees that are discovered during upcoming project development and layout.
Total Acres		**3**	**3**	
Create down woody debris habitat: Cut and leave trees on site; scatter and/or pile debris for wildlife habitat.				
--	--	--	--	Stands which include heritage sites that require vegetation cutting for restoration.
Total Acres		**--**	**--**	
Clearcut for aspen/birch regeneration (also included in Table A-2: Summary of Proposed Timber Treatments).				
56	9	22	4	
60	5	37	15	
61	25	9	9	
Total Acres		**46**	**29**	
Restore existing permanent upland opening: Mowing, hand cutting and/or burning treatment methods.				
39	106	10	10	
56	101	1	1	
56	102	3	3	
61	106	1	1	Within IRA.
62	101	1	1	
62	103	1	1	
63	102	3	3	
63	104	18	18	
63	105	4	4	
227	102	9	9	
Total Acres		**51**	**51**	
Land clearing to create permanent upland opening (also included in Table A-2: Summary of Timber Treatments); Restore as needed: Mowing, hand cutting and/or burning treatment methods.				
56	2	18	8	Combine with portion of S2 for one opening.
56	3	45	3	Combine with portions of S4 and C62/S21 for one opening.
56	4	44	6	Combine with portions of S3 and C 62/S21 for one opening.
56	8	30	5	Combine with S102 for one larger opening.
56	10	33	3	Combine with portion of S17 for one opening.
56	12	36	10	Combine with portion of S2 for one opening.
56	17	63	15	Combine with portion of S10 for one opening.
57	1	80	16	
57	5	88	18	
58	8	43	19	
60	5	37	17	
61	13	27	14	
61	14	28	12	
61	24	82	3	Combine with S106 and portion of S43 for one opening; within IRA.
61	43	22	3	Combine with Stand 106 and portion of S24 for one opening.
62	1	47	17	

Table A-1: Proposed Wildlife Habitat Treatments.				
Comp	**Stand**	**Acres**	**Treatment Acres**	**Additional Information**
62	2	41	11	Combine with S101, S103, and portion of S27 for one opening.
62	13	15	2	Combine with portion of S14 for one opening.
62	14	42	17	Combine with portion of S13 for one opening.
62	21	32	10	Combine with portions of C 56/S3 and 4 for one opening.
62	27	18	3	Combine with S101, S103, and portion of S2 for one opening.
63	48	25	12	
Total Acres		**896**	**224**	

Table A-2: Proposed Timber Harvest Treatments				
Compartment 50				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest acres**
2	29	Hardwood	Improvement Cut in two blocks	11
3	92	Hardwood	Group Selection for hardwood and oak establishment	59
4	82	Hardwood	Group Selection for hardwood and oak establishment	72
5	27	Hardwood	Improvement Cut	26
6	25	Hardwood	Improvement Cut, enhance oak	19
7	43	Hardwood	Improvement Cut	33
9	77	Oak	Single Tree Selection	16
Compartment 56				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest acres**
2	18	Hardwood	Land Clearing for Permanent Wildlife Opening	8
3	45	Mixedwood	Single Tree Selection in two blocks	32
3	45	Mixedwood	Land Clearing for Permanent Wildlife Opening	3
4	44	Hardwood	Land Clearing for Permanent Wildlife Opening	6
5	5	Mixedwood	Improvement Cut, aspen release	5
6	7	Hardwood	Thinning, aspen release	7
7	15	Hardwood	Improvement Cut, aspen release	10
8	30	Softwood	Land Clearing for Permanent Wildlife Opening	5
9	22	Mixedwood	Clearcut for aspen/ paper birch	4
10	33	Hardwood	Land Clearing for Permanent Wildlife Opening	3
11	17	Hardwood	Single Tree Selection	16
12	36	Hardwood	Thinning	25
12	36	Hardwood	Land Clearing for Permanent Wildlife Opening	10
13	28	Hardwood	Thinning	28
14	23	Hardwood	Seed Tree	20
14	23	Hardwood	Improvement Cut	3
15	9	Hardwood	Improvement Cut	10
16	19	Hardwood	Improvement Cut	19
17	63	Hardwood	Land Clearing for Permanent Wildlife Opening	15
17	63	Hardwood	Thinning	48
Compartment 57				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest acres**
1	80	Hardwood	Land Clearing for Permanent Wildlife Opening	16
1	80	Hardwood	Single Tree Selection	64
2	23	Softwood	Single Tree Selection	5
5	88	Hardwood	Land Clearing for Permanent Wildlife Opening	18
10	8	Hardwood	Single Tree Selection, softwood release	8

Table A-2: Proposed Timber Harvest Treatments				
Compartment 58				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest acres**
8	43	Hardwood	Land Clearing for Permanent Wildlife Opening	19
8	43	Hardwood	Overstory Removal Cut	22
9	40	Hardwood	Improvement Cut	10
9	40	Hardwood	Seed Tree	29
14	38	Hardwood	Single Tree Selection	38
15	47	Hardwood	Thinning	45
16	67	Hardwood	Three-cut Shelterwood, softwood release	28
16	67	Hardwood	Single Tree Selection, softwood release	35
18	63	Hardwood	Three-cut Shelterwood, softwood release in two blocks	33
18	63	Hardwood	Single Tree Selection, softwood release	16
19	71	Hardwood	Single Tree Selection	26
22	9	Hardwood	Single Tree Selection	9
Compartment 59				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest Acres**
4	55	Hardwood	Two-cut Shelterwood	28
4	55	Hardwood	Single Tree Selection	26
10	71	Hardwood	Two-cut Shelterwood	29
10	71	Hardwood	Single Tree Selection	18
11	28	Hardwood	Shelterwood with Reserves, enhance oak	28
15	61	Hardwood	Two-cut Shelterwood	30
15	61	Hardwood	Single Tree Selection	31
16	36	Softwood	Thinning	17
16	36	Softwood	Group Selection, release oak	19
18	40	Hardwood	Thinning	40
Compartment 60				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest Acres**
4	9	Hardwood	Two-cut Shelterwood	9
5	37	Hardwood	Clearcut for aspen/paper birch	15
5	37	Hardwood	Land Clearing for Permanent Wildlife Opening	17
21	63	Hardwood	Improvement Cut	36
21	63	Hardwood	Two-cut Shelterwood	28
29	52	Hardwood	Group Selection	14
29	52	Hardwood	Two-cut Shelterwood	29
32	36	Hardwood	Two-cut Shelterwood	29
33	16	Hardwood	Group Selection	16
35	21	Hardwood	Shelterwood with Reserves	21
36	8	Hardwood	Thinning	8
37	12	Hardwood	Thinning	12
45	17	Hardwood	Two-cut Shelterwood	17
Compartment 61				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest Acres**
2	22	Hardwood	Two-cut Shelterwood	22
5	33	Hardwood	Improvement Cut	9
5	33	Hardwood	Two-cut Shelterwood	24
7	87	Hardwood	Improvement Cut	1
7	87	Hardwood	Two-cut Shelterwood Removal in 3 blocks	60
7	87	Hardwood	Single Tree Selection, softwood release	26
10	20	Hardwood	Three-cut Shelterwood	20
13	27	Hardwood	Land Clearing for Permanent Wildlife Opening	14
14	28	Hardwood	Land Clearing for Permanent Wildlife Opening	12

Stand	Acres	Forest Type	Harvest Method	Harvest Acres
15	8	Hardwood	Single Tree Selection	8
18	31	Hardwood	Single Tree Selection	31
19	31	Hardwood	Two-cut Shelterwood	30
23	36	Hardwood	Improvement Cut	36
24	82	Hardwood	Land Clearing for Permanent Wildlife Opening	3
25	9	Hardwood	Clearcut for softwood and aspen/paper birch	9
37	28	Hardwood	Improvement Cut	28
40	11	Hardwood	Improvement Cut	8
42	16	Hardwood	Single Tree Selection	12
43	22	Hardwood	Land Clearing for Permanent Wildlife Opening	3
44	27	Hardwood	Seed Tree	27
46	27	Hardwood	Group Selection	27
Compartment 62				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest Acres**
1	47	Hardwood	Improvement Cut	19
1	47	Hardwood	Land Clearing for Permanent Wildlife Opening	16
2	41	Hardwood	Land Clearing for Permanent Wildlife Opening	11
4	15	Hardwood	Single Tree Selection, release softwoods	15
6	31	Hardwood	Thinning	31
9	34	Hardwood	Improvement Cut	21
10	54	Hardwood	Improvement Cut	50
11	8	Hardwood	Single Tree Selection	8
12	30	Hardwood	Seed Tree for aspen/birch	19
12	30	Hardwood	Single Tree Selection, release softwoods	11
13	15	Hardwood	Land Clearing for Permanent Wildlife Opening	2
13	15	Hardwood	Single Tree Selection	13
14	42	Hardwood	Land Clearing for Permanent Wildlife Opening	17
18	44	Hardwood	Improvement Cut	32
19	29	Hardwood	Improvement Cut	14
21	32	Hardwood	Thinning	8
21	32	Hardwood	Improvement Cut	11
21	32	Hardwood	Land Clearing for Permanent Wildlife Opening	10
23	60	Hardwood	Thinning	60
24	12	Hardwood	Improvement Cut	12
25	17	Hardwood	Thinning	17
27	18	Softwood	Land Clearing for Permanent Wildlife Opening	3
33	8	Mixedwood	Improvement Cut	8
Compartment 63				
Stand	**Acres**	**Forest Type**	**Harvest Method**	**Harvest Acres**
5	20	Hardwood	Single Tree Selection	20
8	73	Hardwood	Single Tree Selection	30
23	9	Hardwood	Improvement Cut	9
24	12	Mixedwood	Improvement Cut	12
25	28	Hardwood	Two-cut Shelterwood	28
27	39	Hardwood	Improvement Cut	39
29	13	Hardwood	Thinning	13
30	69	Hardwood	Three-cut Shelterwood	22
30	69	Hardwood	Single Tree Selection in two blocks	47
48	25	Hardwood	Improvement Cut	13
48	25	Hardwood	Land Clearing for Permanent Wildlife Opening	12
49	14	Hardwood	Single Tree Selection	14
Total Stand Acres:				***3,322 acres***
Total Harvest Acres:				***2,534 acres***

Table A-3: Summary of Proposed Timber Harvest Treatments	
Summary of Proposed Harvest Treatments	**Treatment Acres**
Uneven-Aged Harvest Treatments	
Hardwood Single Tree Selection with gaps to regenerate uneven-aged hardwoods	411
Hardwood Single Tree Selection with gaps to create an uneven-aged mixedwood stand	112
Mixedwood Single Tree Selection with gaps to regenerate uneven-aged softwoods/hardwoods	32
Oak Single Tree Selection with gaps to create an uneven-aged mixed oak-hardwood stand	16
Softwood Single Tree Selection with gaps to regenerate uneven-aged softwoods	5
Total Single Tree Selection	**576**
Hardwood Group Selection to regenerate uneven-aged hardwoods	57
Hardwood Group Selection to regenerate uneven-aged hardwoods and oak	131
Softwood Group Selection to regenerate uneven-aged softwoods and oak	19
Total Group Selection	**207**
Even-Aged Harvest Treatments	
Hardwood Thinning to improve composition, growth and spacing	343
Softwood Thinning to improve composition, growth and spacing	17
Total Thinning	**360**
Hardwood Improvement Cut to improve stand health	447
Hardwood Improvement Cut to improve stand health and release aspen	15
Hardwood Improvement Cut to improve stand health and release oak	19
Mixedwood Improvement Cut to improve stand health	25
Total Improvement Cuts	**506**
Hardwood Three-cut Shelterwood to regenerate even-aged hardwoods	42
Hardwood Three-cut Shelterwood to regenerate even-aged softwoods	61
Total Three-cut Shelterwood	**103**
Hardwood Two-cut Shelterwood	363
Total Two-cut Shelterwood	**363**
Hardwood Shelterwood with Reserves to regenerate even-aged hardwoods and oak	49
Total Shelterwood with Reserves	**49**
Hardwood Overstory Removal Cut to release young hardwood saplings and small trees	22
Total Overstory Removal Cut	**22**
Hardwood Seed Tree cut to regenerate even-aged hardwoods	76
Hardwood Seed Tree cut to regenerate even-aged hardwoods and release aspen	19
Total Seed Tree	**95**
Hardwood Clearcut to regenerate aspen and/or birch	25
Mixedwood Clearcut to regenerate aspen and/ or birch	4
Total Clearcut	**29**
Land Clearing to Convert Forest to Openings	
Hardwood Land Clearing to convert stand into a permanent upland wildlife opening	213
Mixedwood Land Clearing to convert stand into a permanent upland wildlife opening	3
Softwood Land Clearing to convert stand into a permanent upland wildlife opening	8
Total Land Clearing to Convert Forest to Openings	**224**
Total Uneven-aged Harvest Treatment	***783 acres***
Total Even-aged Harvest Treatment	***1,527 acres***
Total Land Clearing	***224 acres***
TOTAL HARVEST TREATMENT	***2,534 acres***

Table A-4: Summary of Proposed Stand Improvement and Tree Planting Activities.				
Stand	**Stand Acres**	**Forest Type**	**Treatment Method**	**Total Acres**
Compartment 56				
4	44	Hardwood	Crop tree release	38
10	33	Hardwood	Crop tree release	29
Compartment 61				
14	28	Hardwood	Crop tree release	15
45	8	Hardwood	Crop tree release	8
Total Stand Acres			***113 acres***	
Total Stand Improvement Treatment			***90 acres***	

Table A-5: Summary of Reforestation Activities (Site Preparation for Natural Regeneration or Artificial Regeneration following all Clearcut, Seed Tree, Shelterwood, Single Tree Selection and Group Selection Harvests).	
Forest Type	**Proposed Action (acres)**
Hardwood	1,362
Oak	17
Mixedwood	36
Softwood	24
Total Acres	***1,439***